

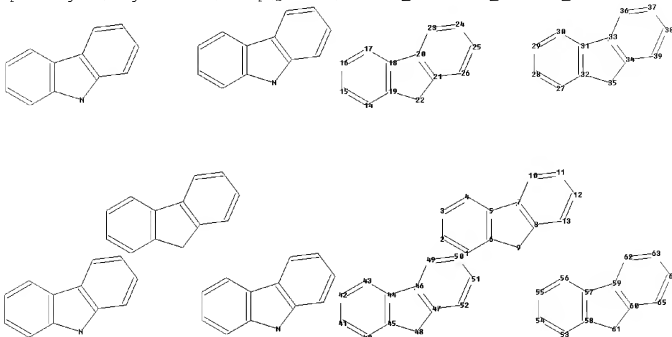
10/594,273 /BAC/

=> file reg

FILE 'REGISTRY' ENTERED AT 15:23:30 ON 20 NOV 2010

=>

Uploading C:\Program Files\Stnexp\Queries\10594273_4carbazole_fluorene_20101120.str



ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 7-10 8-9 8-13 10-11 11-12 12-13
14-15 14-19 15-16 16-17 17-18 18-19 18-20 19-22 20-21 20-23 21-22 21-26
23-24 24-25
25-26 27-28 27-32 28-29 29-30 30-31 31-32 31-33 32-35 33-34 33-36 34-35
34-39 36-37
37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 44-46 45-48 46-47 46-49
47-48 47-52 49-50
50-51 51-52 53-54 53-58 54-55 55-56 56-57 57-58 57-59 58-61 59-60 59-62
60-61 60-65
62-63 63-64 64-65

exact/norm bonds :

5-7 6-9 8-9 18-20 19-22 21-22 31-33 32-35 34-35 44-46 45-48 47-48 57-59
58-61 60-61

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-10 8-13 10-11 11-12 12-13 14-15 14-19
15-16 16-17 17-18 18-19 20-21 20-23 21-26 23-24 24-25 25-26 27-28 27-32
28-29 29-30
30-31 31-32 33-34 33-36 34-39 36-37 37-38 38-39 40-41 40-45 41-42 42-43
43-44 44-45 46-47
46-49 47-52 49-50 50-51 51-52 53-54 53-58 54-55 55-56 56-57 57-58 59-60

59-62 60-65
62-63 63-64 64-65

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:Atom 32:Atom
33:Atom 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom
42:Atom 43:Atom
44:Atom 45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 51:Atom 52:Atom
53:Atom 54:Atom
55:Atom 56:Atom 57:Atom 58:Atom 59:Atom 60:Atom 61:Atom 62:Atom 63:Atom
64:Atom 65:Atom

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.

=> s l1 sss sam

SAMPLE SEARCH INITIATED 15:23:54

SAMPLE SCREEN SEARCH COMPLETED - 1692 TO ITERATE

100.0% PROCESSED 1692 ITERATIONS (9 INCOMPLETE) 17 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 31373 TO 36307

PROJECTED ANSWERS: 93 TO 587

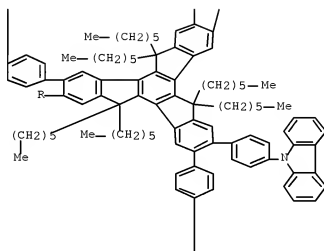
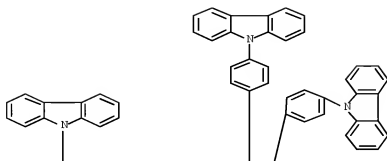
L2 17 SEA SSS SAM L1

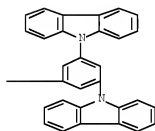
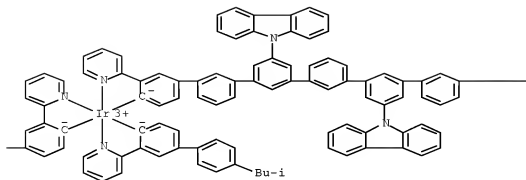
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L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN

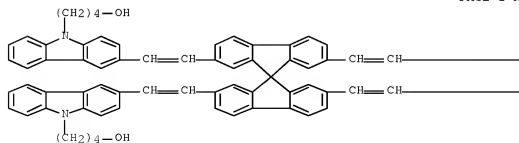
IN 9H-Carbazole, 9,9',9'',9''',9''''',9''''''-[(5,5,10,10,15,15-hexahexyl-10,15-dihydro-5H-tribenzo[a,f,k]trindene-2,3,7,8,12,13-hexayl)hexa-4,1-phenylene]hexakis-

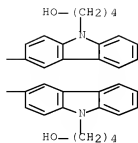
MF C171 H156 N6





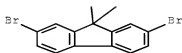
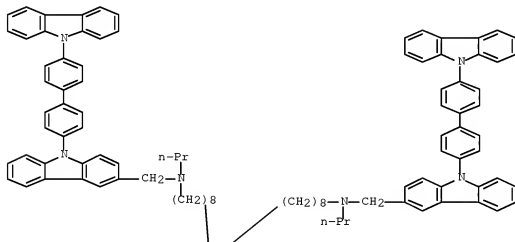
L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole-9-butanol, 3,3',3'',3'''-(9,9'-spirobi[9H-fluorene]-2,2',7,7'-
 tetrayltetra-2,1-ethenediyl)tetrakis-
 MF C97 H84 N4 O4





PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

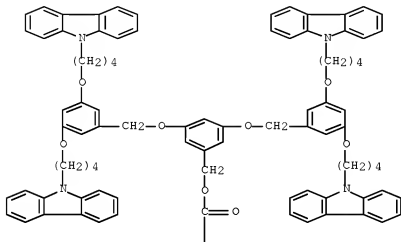
L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Fluorene-9,9-dioctanamine, 2,7-dibromo-N,N'-bis[[9-[4'-(9H-carbazol-9-yl)[1,1'-biphenyl]-4-yl]-9H-carbazol-3-yl)methyl]-N,N'-dipropyl-
 MF C109 H102 Br2 N6



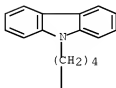
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

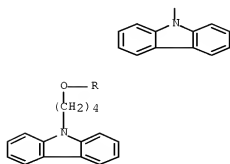
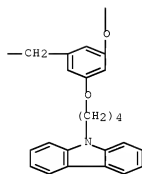
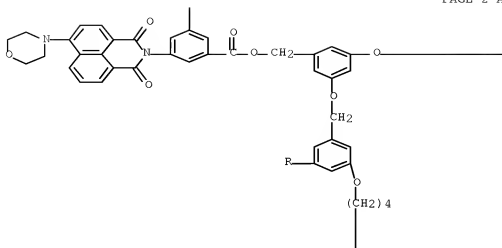
L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 ITERATION INCOMPLETE
 IN 1,3-Benzenedicarboxylic acid, 5-[6-(4-morpholinyl)-1,3-dioxo-1H-
 benz[de]isoquinolin-2(3H)-yl]-, bis[[3,5-bis[[3,5-bis[4-(9H-carbazol-9-
 yl)butoxy]phenyl]methoxy]phenyl]methyl] ester (9CI)
 MF C194 H174 N10 O19

PAGE 1-A



PAGE 1-B

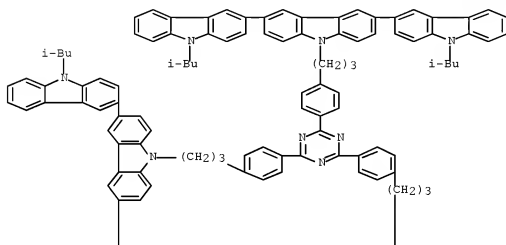




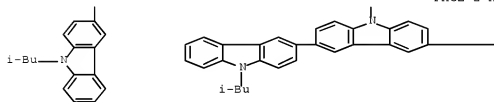
L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
ITERATION INCOMPLETE

IN 3,3':6',3''-Ter-9H-carbazole, 9',9''',9''''''-[1,3,5-triazine-2,4,6-
triyltris(4,1-phenylene-3,1-propanediyl)]tris[9,9''-bis(2-methylpropyl)-
MF C162 H144 N12

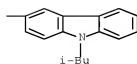
PAGE 1-A



PAGE 2-A



PAGE 2-B



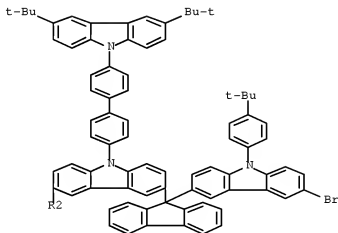
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
IN Boronic acid, B,B'-[9-(2-ethylhexyl)-9H-carbazole-3,6-diyl]bis-, polymer
with 9-[4'-[3,6-bis(1,1-dimethylethyl)-9H-carbazol-9-yl][1,1'-biphenyl]-4-
yl]-3,6-bis[9-[6-bromo-9-[4-(1,1-dimethylethyl)phenyl]-9H-carbazol-3-yl]-
9H-fluoren-9-yl]-9H-carbazole
MF (C114 H92 Br2 N4 . C20 H27 B2 N O4)x
CI PMS

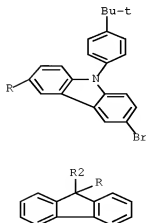
RELATED POLYMERS AVAILABLE WITH POLYLINK

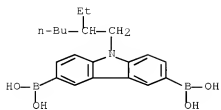
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PAGE 1-A



PAGE 2-A

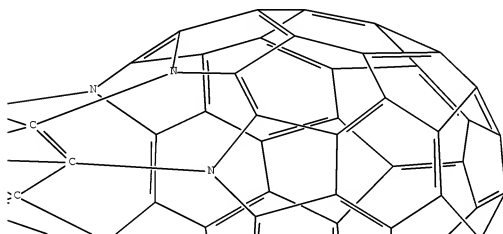
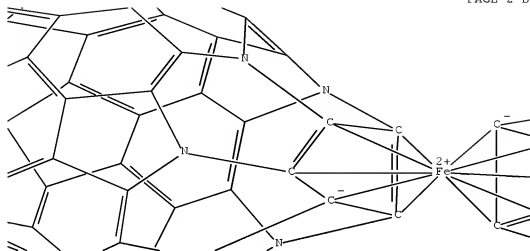


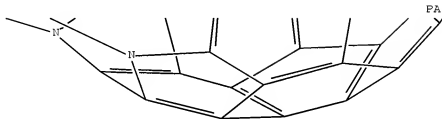


L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN Iron, bis[(8,9,10,25,26-η)-8H-1,7,11,24,27-pentaaza[5,6]fulleren-C60-
 Ih-8-yl]-
 MF C110 Fe N10
 CI CCS

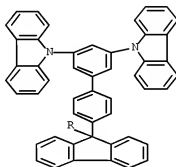
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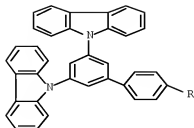






L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9',9'',9'''-[9H-fluoren-9-ylidenebis([1,1'-biphenyl]-
 4',3,5-triyl)]tetrakis-
 MF C85 H54 N4





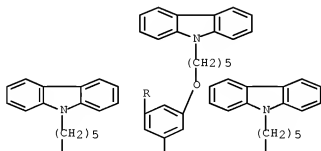
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

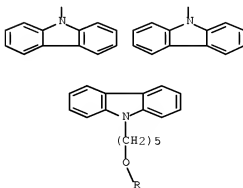
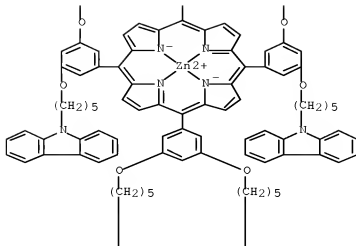
L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
ITERATION INCOMPLETE

IN Zinc, [5,10,15,20-tetrakis[3,5-bis[[5-(9H-carbazol-9-yl)pentyl]oxy]phenyl]-
21H,23H-porphinato(2-)-κN21,κN22,κN23,κN24]-,
(SP-4-1)- (9CI)

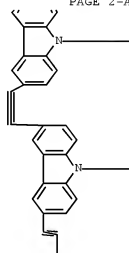
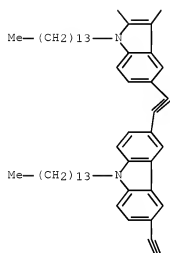
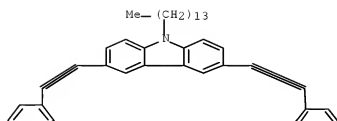
MF C180 H164 N12 O8 Zn

CI CCS



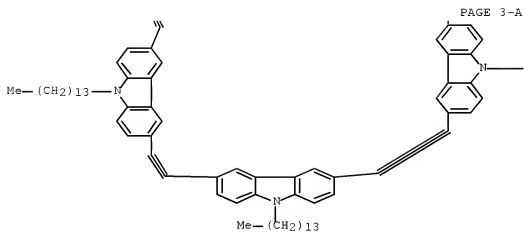


L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 ITERATION INCOMPLETE
 IN 1,71:3,5:8,10:12,14:17,19:21,23:26,28:30,32:35,37:39,41:44,46:48,50:53,55:
 57,59:62,64:66,68-Hexadecaethenotetrahexaconta[1,2-c:9,10-c':17,18-
 c'':25,26-c''':33,34-c''':41,42-c''':49,50-c''':57,58-
 c''''']octapyrrole, 6,7,15,16,24,25,33,34,42,43,51,52,60,61,69,70-
 hexadecadehydro-2,11,20,29,38,47,56,65-octahydro-2,11,20,29,38,47,56,65-
 octatetradecyl- (9CI)
 MF C224 H280 N8



— (CH₂)₁₃—Me

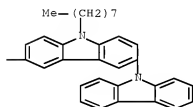
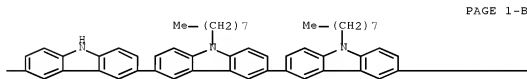
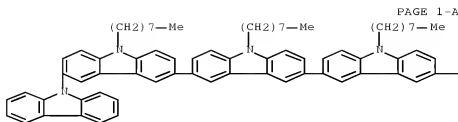
—— (CH₂)₁₃—Me



—— (CH₂)₁₃—Me

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN Dibenzo[f,h]quinoxaline, 6,11-bis[9,9-bis[6-(9H-carbazol-9-yl)hexyl]-9H-
 fluoren-2-yl]-
 MF C114 H102 N6

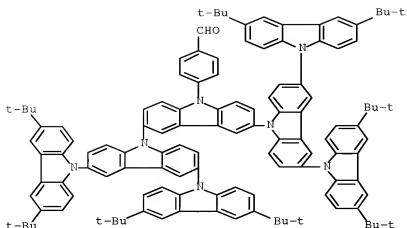


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
ITERATION INCOMPLETE

IN Benzaldehyde, 4-[6',6'''-bis[3,6-bis(1,1-dimethylethyl)-9H-carbazol-9-yl]-
3,3''',6,6'''-tetrakis(1,1-
dimethylethyl)[9,3':9',3''':6'',9''':3''',9''''-quinque-9H-carbazol]-9-yl]-

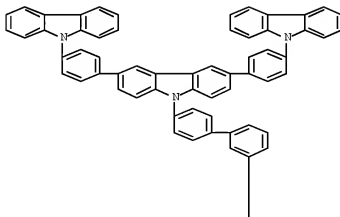
MF C123 H119 N7 O

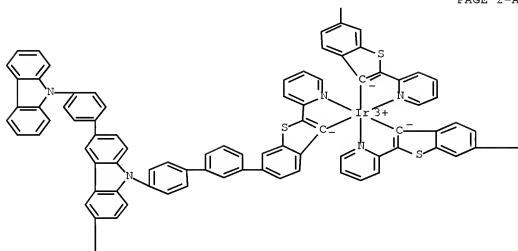
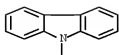
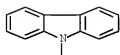


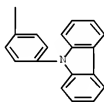
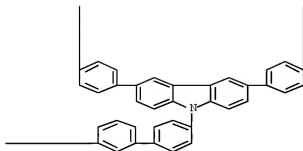
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 ITERATION INCOMPLETE
 IN Iridium, tris[6-[4'-[3,6-bis[4-(9H-carbazol-9-yl)phenyl]-9H-carbazol-9-yl][1,1'-biphenyl]-3-yl]-2-(2-pyridinyl-κN)benzo[b]thien-3-yl-
 KC]-
 MF C219 H135 Ir N12 S3
 CI CCS

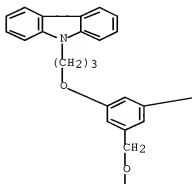
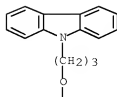
PAGE 1-A

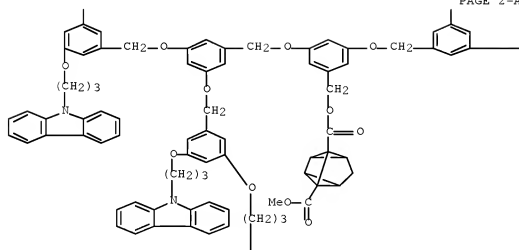
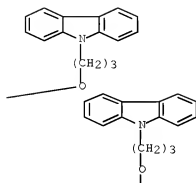


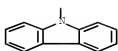
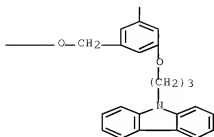




L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 ITERATION INCOMPLETE
 IN Tetracyclo[3.2.0.02,7.04,6]heptane-1,5-dicarboxylic acid,
 1-[[[3,5-bis[[3,5-bis[[3,5-bis[3-(9H-carbazol-9-
 yl)propoxy]phenyl]methoxy]phenyl]methoxy]phenyl]methyl] 5-methyl ester
 MF C179 H156 N8 O18

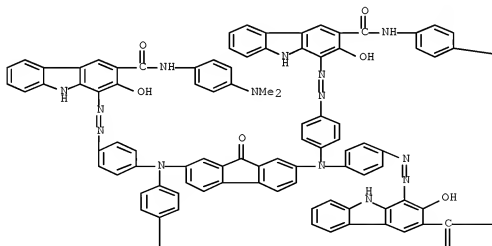




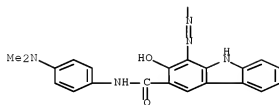
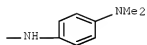


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 17 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole-3-carboxamide, 1,1',1'',1'''-[(9-oxo-9H-fluorene-2,7-
 diyl)bis[nitrilobis(4,1-phenyleneazo)]]tetrakis[N-[4-
 (dimethylamino)phenyl]-2-hydroxy- (9CI)
 MF C121 H94 N22 O9



— NMe₂



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

=> s l1 sss ful
 FULL SEARCH INITIATED 15:27:20
 FULL SCREEN SEARCH COMPLETED - 33964 TO ITERATE

100.0% PROCESSED 33964 ITERATIONS (205 INCOMPLETE) 318 ANSWERS
 SEARCH TIME: 00.00.13

L3 318 SEA SSS FUL L1

=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 15:27:39 ON 20 NOV 2010

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 207 L3
 4906904 AD<20040326
 (AD<20040326)

24875994 PD<20040326

(PD<20040326)

L4 45 L3 AND (AD<20040326 OR PD<20040326)

=> d l4 1-45 ibib ab hitrn hitstr

L4 ANSWER 1 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:281206 HCAPLUS Full-text

DOCUMENT NUMBER: 142:344877

TITLE: Organic electroluminescent (EL) devices with high brightness, emission efficiency, and heat resistance
INVENTOR(S): Maki, Shinichiro; Tanaka, Hiroaki; Kaneko, Tetsuya; Onikubo, Shunichi

PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 29 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005085599	A	20050331	JP 2003-316326	20030909 <--
JP 4581355	B2	20101117		
PRIORITY APPLN. INFO.:			JP 2003-316326	20030909

OTHER SOURCE(S): MARPAT 142:344877

AB The devices, useful for displays in automobiles, have phosphor-containing light-emitting layers (A) or plural organic thin film layers including A, wherein the organic layers contain (un)substituted 9-R1-9-R2-fluorene [R1, R2 = (un)substituted Ph] in A or in hole-injecting and/or hole-transporting layers.

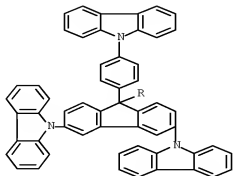
IT 848679-73-2 848679-75-4
RL: TEM (Technical or engineered material use); USES (Uses)
(host, light-emitting layer; organic EL devices containing diphenylfluorene derivs. with high brightness, emission efficiency, and heat resistance)

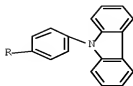
IT 848679-73-2 848679-75-4
RL: TEM (Technical or engineered material use); USES (Uses)
(host, light-emitting layer; organic EL devices containing diphenylfluorene derivs. with high brightness, emission efficiency, and heat resistance)

RN 848679-73-2 HCAPLUS

CN 9H-Carbazole, 9,9'-(9,9-bis[4-(9H-carbazol-9-yl)phenyl]-9H-fluorene-3,6-diyl)bis- (9CI) (CA INDEX NAME)

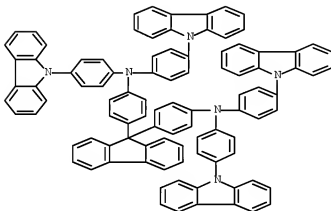
PAGE 1-A





RN 848679-75-4 HCAPLUS

CN Benzenamine, 4,4'-9H-fluoren-9-ylidenebis[N,N-bis[4-(9H-carbazol-9-yl)phenyl]- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L4 ANSWER 2 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:275729 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 142:363421

TITLE: Amorphous metal complex dendrimers and thin-film
organic electroluminescent devices using them

INVENTOR(S): Maruyama, Sumio; Kawanishi, Yuji

PATENT ASSIGNEE(S): National Institute of Advanced Industrial Science and
Technology, Japan

SOURCE: Jpn. Kokai Tokyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO.

DATE

JP 2005082580	A	20050331	JP 2003-319858	20030911 <--
JP 4210754	B2	20090121		

PRIORITY APPLN. INFO.:
OTHER SOURCE(S): MARPAT 142:363421
JP 2003-319858 20030911

AB The dendrimers are tris[bis(N-carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato]metals with C1-8 alkyl substituents and metals selected from Al, Zn, Be, Ge, Mg. The dendrimers are capable of forming films by wet process, e.g., coating, because of good solvent solubility

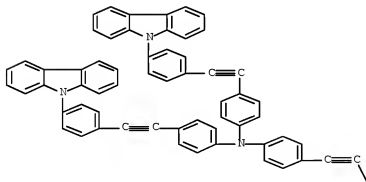
IT 849110-50-5P
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(amorphous tris[bis(N-carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato]metals for thin-film organic electroluminescent devices)

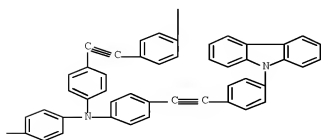
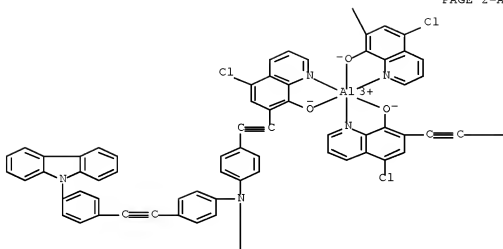
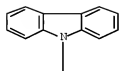
IT 849110-50-5P
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(amorphous tris[bis(N-carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato]metals for thin-film organic electroluminescent devices)

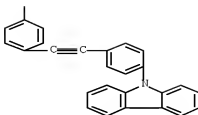
RN 849110-50-5 HCAPLUS

CN Aluminum, tris[7-[2-[4-[bis[4-[2-[4-(9H-carbazol-9-yl)phenyl]ethynyl]phenyl]amino]phenyl]ethynyl]-5-chloro-8-quinolinolato-kN1,kO8]-, (OC-6-22)- (CA INDEX NAME)

PAGE 1-A







L4 ANSWER 3 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2004:756690 HCAPLUS Full-text
 DOCUMENT NUMBER: 141:285536
 TITLE: Organic compound and organic electroluminescence device
 INVENTOR(S): Okada, Masato
 PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 87 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004078722	A1	20040916	WO 2004-JP2804	20040305 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
JP 2004292436	A	20041021	JP 2004-62291	20040305 <--
GB 2415960	A	20060111	GB 2005-20361	20040305 <--
DE 112004000350	T5	20060202	DE 2004-112004000350	20040305 <--
US 20060194073	A1	20060831	US 2005-548984	20050907
PRIORITY APPLN. INFO.:			JP 2003-62590	A 20030307
			JP 2004-62291	A 20040305
			WO 2004-JP2804	W 20040305

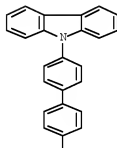
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
 OTHER SOURCE(S): MARPAT 141:285536

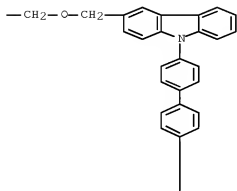
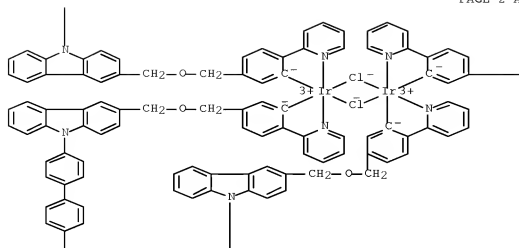
AB The invention relates to an organic compound capable of realizing high luminous efficiency, whose application by coating technique is easy; and an organic electroluminescence device of high luminous efficiency in which the organic compound is used. In particular, the organic compound is represented by the formula: EM-X-CTM or (EM-X-CTM)-Y wherein EM represents a fluorescent material or phosphorescent material; CTM represents a charge transporting material; X represents a chemical bond chain linking EM with CTM; and Y

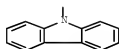
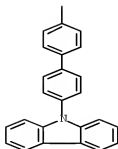
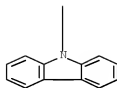
represents a substituent for at least enhancing the solvent solubility, introduced in any of the EM, CTM and X moieties. Further, there is provided an organic EL device comprising at least 1 pair of facing electrodes and, interposed between the electrodes, a single or multiple organic compound layers, wherein at least 1 of the organic compound layers contains the organic compound represented by the formula: EM-X-CTM or (EM-X-CTM)-Y.

IT 757953-08-5P 757953-10-9P 757953-12-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (organic compound and organic electroluminescence device)
 IT 757953-08-5P 757953-10-9P 757953-12-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (organic compound and organic electroluminescence device)
 RN 757953-08-5 HCAPLUS
 CN Iridium, tetrakis[5-[[[9-[4'-(9H-carbazol-9-yl)[1,1'-biphenyl]-4-yl]-9H-carbazol-3-yl]methoxy)methyl]-2-(2-pyridinyl-κN)phenyl-κC]di-μ-chlorodi- (9CI) (CA INDEX NAME)

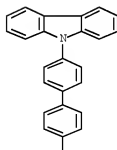
PAGE 1-A

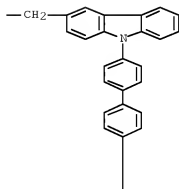
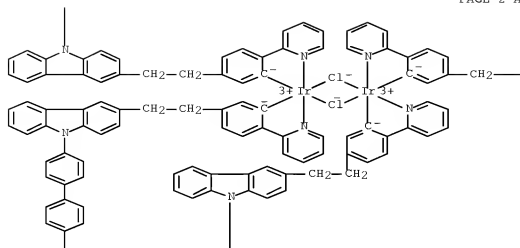


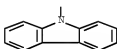
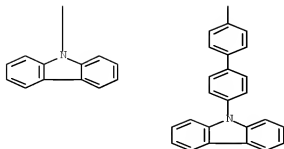




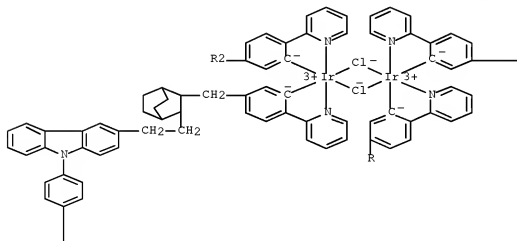
RN 757953-10-9 HCAPLUS
 CN Iridium, tetrakis[5-[2-[9-[4'-(9H-carbazol-9-yl)[1,1'-biphenyl]-4-yl]-9H-carbazol-3-yl]ethyl]-2-(2-pyridinyl-κN)phenyl-κC]di-μ-chlorodi- (9CI) (CA INDEX NAME)

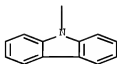
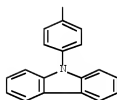
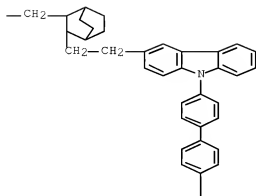


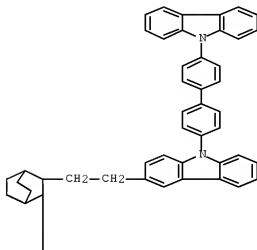
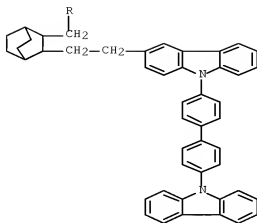




RN 757953-12-1 HCAPLUS
 CN Iridium, tetrakis[5-[[3-[2-[9-[4'-(9H-carbazol-9-yl)][1,1'-biphenyl]-4-yl]-9H-carbazol-3-yl]ethyl]bicyclo[2.2.2]oct-2-yl]methyl]-2-(2-pyridinyl-κN)phenyl-κC]di-μ-chlorodi- (9CI) (CA INDEX NAME)



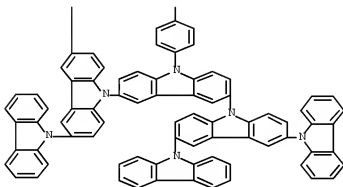
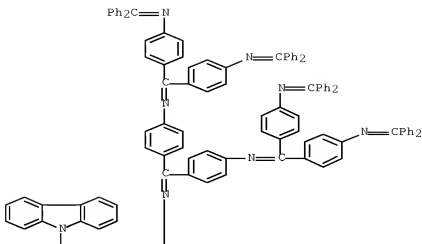




OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(7 CITINGS)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS

L4 ANSWER 4 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2004:740660 HCAPLUS Full-text
 DOCUMENT NUMBER: 141:268188
 TITLE: Organic electroluminescent devices and materials using
 for organic electroluminescent devices
 INVENTOR(S): Yamamoto, Kimihisa; Cho, Jun-Sang; Sato, Norifusa;
 Kimoto, Atsushi
 PATENT ASSIGNEE(S): Kanagawa Academy of Science and Technology, Japan
 SOURCE: PCT Int. Appl., 62 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004077888	A1	20040910	WO 2004-JP2383	20040227 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPLN. INFO.:			JP 2003-51700	A 20030227
			JP 2003-53122	A 20030228
			JP 2003-374892	A 20031104
AB	The invention relates to a material using for organic electroluminescent devices (EL) which comprises at least a compound represented by the formula: (W)k-X-(Y)l, where X represents a core moiety; each of Y and W independently represents a phenylazomethine dendron subunit or a carbazole dendron subunit; l is an integer indicating the number of Ys bonded to X; and k is an integer indicating the number of Ws bonded to X.			
IT 748157-33-7	RL: DEV (Device component use); PRP (Properties); USES (Uses) (organic electroluminescent devices and materials using for organic electroluminescent devices)			
IT 748157-33-7	RL: DEV (Device component use); PRP (Properties); USES (Uses) (organic electroluminescent devices and materials using for organic electroluminescent devices)			
RN 748157-33-7	HCAPLUS			
CN	Benzenamine, 4,4'-[[4-(6',6'''-di-9H-carbazol-9-yl[9,3':9',3'':6'',9''':3''',9''''-quinque-9H-carbazol]-9''-yl)phenyl]carbonimidoyl]bis[N-[bis[4-[(diphenylmethylene)amino]phenyl]methylene]- (9CI) (CA INDEX NAME)			



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2004:587406 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 141:277982
 TITLE: High Molecular Weight Dendronized Poly(fluorene)s with Peripheral Carbazole Groups: Synthesis, Characterization, and Properties
 AUTHOR(S): Fu, Yaqin; Li, Yi; Li, Jing; Yan, Shouke; Bo, Zhishan
 CORPORATE SOURCE: State Key Laboratory of Polymer Physics and Chemistry
 Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
 SOURCE: Macromolecules (2004), 37(17), 6395-6400
 CODEN: MAMOBX; ISSN: 0024-9297
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal

LANGUAGE: English

AB Novel kinds of dendronized polymers with both functional core and periphery were synthesized by Suzuki polycondensation (SPC) of carbazole-functionalized 2,7-dibromofluorene macromonomers with 9,9-dioctylfluorene-2,7-diboronic ester. The polymers obtained are of high mol. weight and good thermal stabilities. Photoluminescent studies showed that these kinds of dendronized polymers were promising blue light-emitting materials, which exhibited high quantum efficient yields in solution and films (mainly for second generation).

IT 757967-74-4P 757967-78-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(in preparation of high mol. weight dendronized poly(fluorene)s with peripheral carbazole groups)

IT 759458-41-8P 759458-42-9P 759458-44-1P

759458-45-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation of high mol. weight dendronized poly(fluorene)s with peripheral carbazole groups)

IT 757967-77-4P 757967-78-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(in preparation of high mol. weight dendronized poly(fluorene)s with peripheral carbazole groups)

IT 757967-77-4P 757967-78-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(in preparation of high mol. weight dendronized poly(fluorene)s with peripheral carbazole groups)

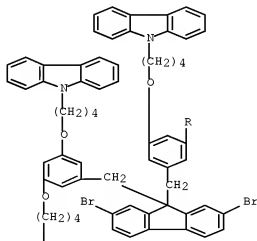
RN 757967-77-4 HCAPLUS

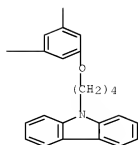
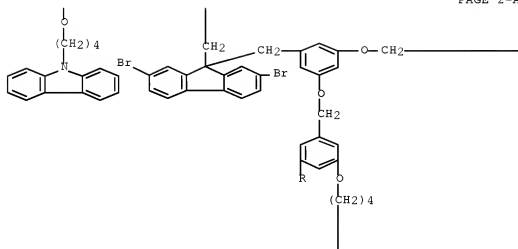
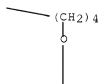
CN 9H-Carbazole, 9,9',9'',9'''-[(2,7-dibromo-9H-fluorene-9-

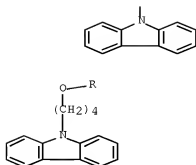
ylidene)bis(methylene-5,1,3-benzenetriyl)]bis(oxy-4,1-

butanediyl)]tetrakis- (9CI) (CA INDEX NAME)

PAGE 1-A







IT 759458-41-6P 759458-42-9P 759458-44-1P
759458-45-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of high mol. weight dendronized poly(fluorene)s with
peripheral

carbazole groups)

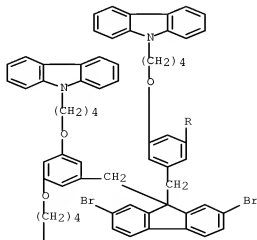
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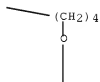
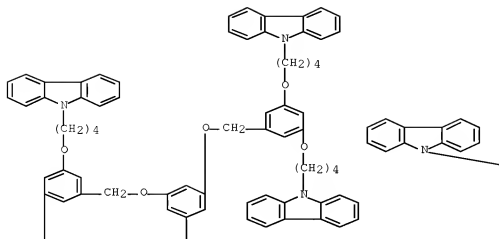
CN 9H-Carbazole, 9,9',9'',9'''-[(2,7-dibromo-9H-fluoren-9-ylidene)bis[(methylene-5,1,3-benzenetriyl)bis(oxy-4,1-butenediyl)]]tetrakis-, polymer with 2,2'-(9,9-dioctyl-9H-fluorene-2,7-diyl)bis[1,3,2-dioxaborinane] (CA INDEX NAME)

CM 1

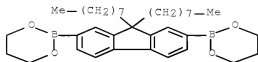
CRN 757967-77-4

CMF C91 H80 Br2 N4 O4





CRN 317802-08-7
CMF C35 H52 B2 O4



RN 759458-44-1 HCAPLUS
CN Poly[9,9-bis[[3,5-bis[4-(9H-carbazol-9-yl)butoxy]phenyl)methyl]-9',9'-dioctyl[2,2'-bi-9H-fluorene]-7,7'-diyl] (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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RN      759458-45-2  HCAPLUS
CN      Poly[9,9-bis[[3,5-bis[[3,5-bis[4-(9H-carbazol-9-
yl)butoxy]phenyl]methoxy]phenyl]methyl]-9',9'-dioctyl[2,2'-bi-9H-fluorene)-
7,7'-divl] (CA INDEX NAME)

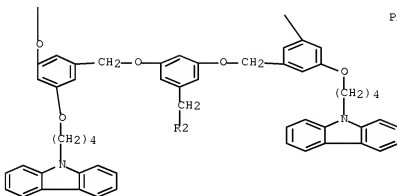
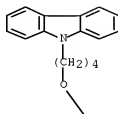
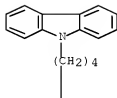
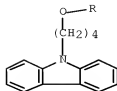
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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



OS.CITING REF COUNT: 62 THERE ARE 62 CAPLUS RECORDS THAT CITE THIS
RECORD (62 CITINGS)
REFERENCE COUNT: 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:569984 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 141:131054
TITLE: Organic electroluminescent elements and
spirobifluorene derivatives useful in them
INVENTOR(S): Vestweber, Horst; Gerhard, Anja; Stoessel, Philipp;
Spreitzer, Hubert
PATENT ASSIGNEE(S): Covion Organic Semiconductors GmbH, Germany
SOURCE: PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004058911	A2	20040715	WO 2003-EP13927	20031209 <--
WO 2004058911	A3	20051208		
W: CN, JP, KR, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
EP 1578885	A2	20050928	EP 2003-782338	20031209 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
CN 1756824	A	20060405	CN 2003-80107453	20031209 <--
CN 100489056	C	20090520		
JP 2006511939	T	20060406	JP 2004-562714	20031209 <--
US 20060063027	A1	20060323	US 2005-540461	20050721
PRIORITY APPLN. INFO.:				
			DE 2002-10261545	A 20021223
			WO 2003-EP13927	W 20031209

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 141:131054

AB Organic electroluminescent devices are described in which the emitting layer consists of a mixture of ≥ 1 hole-transporting material and ≥ 1 emitting material in a weight ratio (hole-transporting material:emitting material) of 1:99 to 99:1 and that ≥ 1 of the substances contains ≥ 1 spiro-9,9'-bifluorene unit. Spiro-9,9'-bifluorene derivs. suitable for use in electroluminescent devices are also described.

IT 214078-86-1

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent elements with emitting layers formed from hole transporting-emitting material mixts. and spirobifluorene derivs. useful in them)

IT 214078-86-1

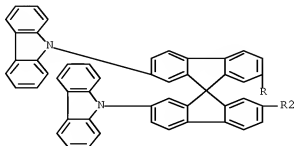
RL: DEV (Device component use); USES (Uses)

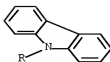
(organic electroluminescent elements with emitting layers formed from hole transporting-emitting material mixts. and spirobifluorene derivs. useful in them)

RN 214078-86-1 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-(9,9'-spirobi[9H-fluorene]-2,2',7,7'-tetrayl)tetrakis- (CA INDEX NAME)

PAGE 1-A





OS.CITING REF COUNT: 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD
(11 CITINGS)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:534550 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 141:225943

TITLE: Synthesis of asymmetrically arranged dendrimers with a carbazole dendron and a phenylazomethine dendron
AUTHOR(S): Kimoto, Atsushi; Cho, Jun-Sang; Higuchi, Masayoshi; Yamamoto, Kimihisa

CORPORATE SOURCE: Department of Chemistry, Faculty of Science and Technology, Keio University, Yokohama, 223-8522, Japan

SOURCE: Macromolecules (2004), 37(15), 5531-5537

CODEN: MAMOBX; ISSN: 0024-9297

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Asym. arranged dendrimers with a carbazole dendron and a phenylazomethine dendron were synthesized by the combination of Ullmann reaction and a dehydration reaction in the presence of titanium tetrachloride. Stepwise complexation in the phenylazomethine dendron unit within these dendrimers and SnCl₂ suggests a gradient in the electron d. associated with the imine groups. The complexation of the dendrimer changes the HOMO/LUMO energy gap of the dendrimer. We show the dendrimers with higher generations have the larger HOMO values. The most electron-rich mol., Cz3-DPA3, has the highest HOMO value of 5.35 eV and, accordingly, is expected to have the lowest barrier for the hole injection from the ITO electrode (4.6 eV) in OLEDs. However, for the HOMO energy levels of the carbazole dendrimer complex with SnCl₂, the energy levels of the carbazoles did not change based on almost the same redox potentials as those of the dendrimers themselves. Using Cz3-DPA3 as a hole-transport layer (HTL), only complexation with metal ions results in the enhanced maximum luminescence from 4041 to 10 640 cd/m² by only complexing with SnCl₂ under the non-optimized conditions. A complexation leads to a high EL efficiency because of the p-type-doped structure of the dendrimers as a hole-transport layer.

IT 743157-33-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis of asym. arranged dendrimers with a carbazole dendron and a phenylazomethine dendron)

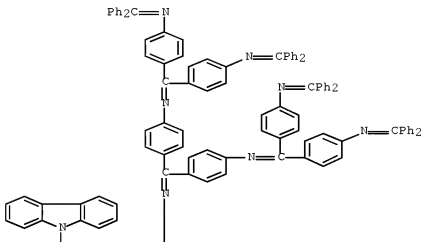
IT 748157-33-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis of asym. arranged dendrimers with a carbazole dendron and a
phenylazomethine dendron)

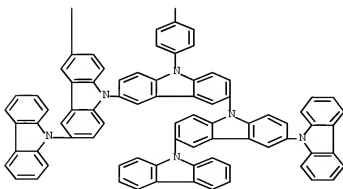
RN 748157-33-7 HCAPLUS

CN Benzenamine, 4,4'-[4-(6',6'''-di-9H-carbazol-9-
yl[9,3':9',3'':6'',9''':3''',9''''-quinque-9H-carbazol]-9''-
yl)phenyl]carbonimidoyl]bis[N-[bis[4-
[(diphenylmethylene)amino]phenyl]methylene]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



OS.CITING REF COUNT: 87 THERE ARE 87 CAPLUS RECORDS THAT CITE THIS
RECORD (89 CITINGS)
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

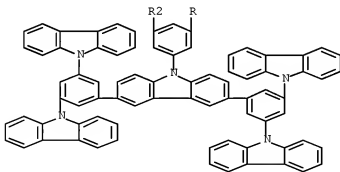
ACCESSION NUMBER: 2004:493154 HCAPLUS Full-text
 DOCUMENT NUMBER: 141:61823
 TITLE: Organic electroluminescent device and display
 INVENTOR(S): Fukuda, Mitsuhiro; Yamada, Taketoshi; Kita, Hiroshi
 PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 35 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

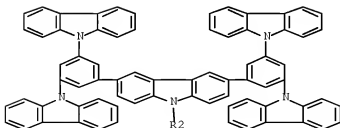
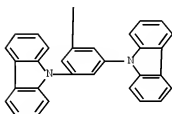
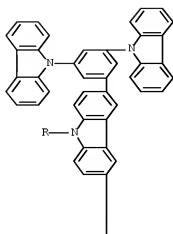
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004171808	A	20040617	JP 2002-333320	20021118 <--
JP 4427947	B2	20100310		
JP 2008205488	A	20080904	JP 2008-74759	20080322
JP 2008252094	A	20081016	JP 2008-74758	20080322
PRIORITY APPLN. INFO.:			JP 2002-333320	A3 20021118

OTHER SOURCE(S): MARPAT 141:61823

- AB The invention relates to an organic electroluminescent device and display, especially a phosphorescent electroluminescence device, comprising the carbazole derivative represented by I [A = aromatic ring residue; R1-8 = H and substituted group (at least one of R1-8 is a substituted group other than H); n = ≥ 1 integer].
 IT 705280-95-9 705280-98-4
 RL: DEV (Device component use); USES (Uses)
 (phosphorescent organic electroluminescent device and display)
 IT 705280-95-9 705280-98-4
 RL: DEV (Device component use); USES (Uses)
 (phosphorescent organic electroluminescent device and display)
 RN 705280-85-9 HCAPLUS
 CN 9H-Carbazole, 9,9',9''-(1,3,5-benzenetriyl)tris[3,6-bis(3,5-di-9H-carbazol-9-ylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A





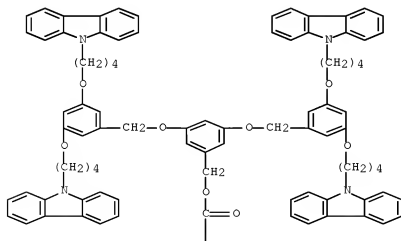
RN 705280-98-4 HCAPLUS
 CN Benzenamine, N,N-diphenyl-4-[3,3'',6,6''-tetrakis(3,5-di-9H-carbazol-9-ylphenyl)[9,3':6',9''-ter-9H-carbazol]-9'-yl]- (9CI) (CA INDEX NAME)

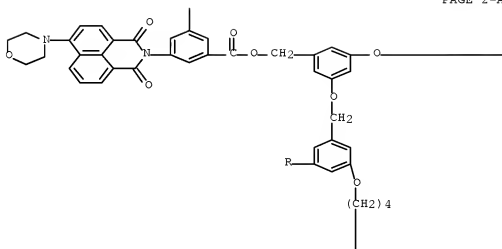
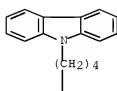
L4 ANSWER 9 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2004:400207 HCAPLUS Full-text
 DOCUMENT NUMBER: 141:147752
 TITLE: Dendron-Functionalized Macromolecules: Enhancing Core Luminescence and Tuning Carrier Injection
 AUTHOR(S): Du, Pa; Zhu, Wei-Hong; Xie, Yu-Qing; Zhao, Fei; Ku, Chien-Pong; Cao, Yong; Chang, Chen-Pin; Tian, He
 CORPORATE SOURCE: Lab for Advanced Materials and Institute of Fine Chemicals, East China University of Science Technology, Shanghai, 200237, Peop. Rep. China
 SOURCE: Macromolecules (2004), 37(12), 4387-4398
 PUBLISHER: CODEN: MAMOBX; ISSN: 0024-9297
 DOCUMENT TYPE: American Chemical Society
 LANGUAGE: Journal
 English
 AB A novel series of naphthalimide dendrimers has been synthesized based on a convergent and divergent combined approach. The dendrimers consist of naphthalimide-based cores, Fréchet-type poly(aryl ether) dendrons, and

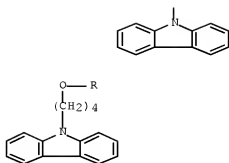
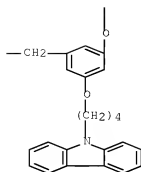
carbazole (CZ) or oxadiazole (OXZ) peripheral groups. The higher generation dendrimer has site-isolation effect, or the dilution effect of the dendrons. This configuration would reduce the aggregating extent or possibility of the core unit, thus resulting in a relatively small red-shift of absorption and fluorescent spectra when they form a solid film for the applications. Studies of steady-state fluorescence properties of the dendrimers show that excitation of the terminal chromophores results mainly in the core emission alone, as the donor emission is seriously quenched due to its effective Foerster intramol. energy transfer to the core. The dendrimers show enhanced luminescence properties of the core, and the enhanced luminescent efficiency is dependent on the generation number of the dendrimers. Time-resolved luminescent measurements further supported the conclusion that the contribution tendency for each peripheral donor is decreased with the increasing of the generation number, especially for the third generation. The dendron-incorporated carbazole unit can decrease the HOMO orbital energy by 0.4 eV, thus facilitating the hole-injection in electroluminescent (EL) devices. The preliminary EL results with a single-layer architecture made with the dendrimers by means of the spin-coating technique demonstrate that these dendrimers could be utilized as promising active nondoping emitters.

- IT 724422-29-1P 727709-57-1P 727709-59-3P
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (dendron-functionalized macromols. for enhancing core luminescence and tuning carrier injection)
- IT 724422-29-1P 727709-57-1P 727709-59-3P
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (dendron-functionalized macromols. for enhancing core luminescence and tuning carrier injection)
- RN 724422-29-1 HCAPLUS
- CN 1,3-Benzenedicarboxylic acid, 5-[6-(4-morpholinyl)-1,3-dioxo-1H-benz[de]isoquinolin-2(3H)-yl]-, bis[[3,5-bis[[3,5-bis[4-(9H-carbazol-9-yl)butoxy]phenyl]methoxy]phenyl]methyl] ester (9CI) (CA INDEX NAME)

PAGE 1-A

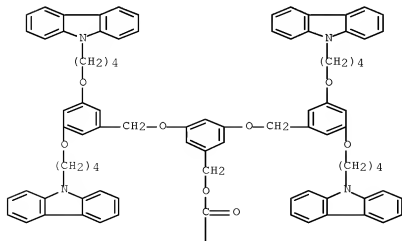


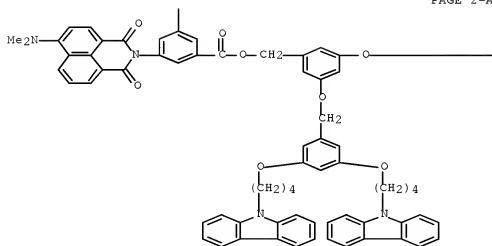
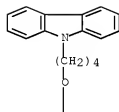


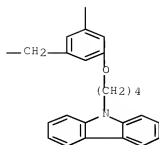


RN 727709-57-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, 5-[6-(dimethylamino)-1,3-dioxo-1H-benz[de]isoquinolin-2(3H)-yl]-, bis[[3,5-bis[[3,5-bis[4-(9H-carbazol-9-yl)butoxy]phenyl]methoxy]phenyl]methyl] ester (9CI) (CA INDEX NAME)

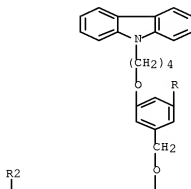


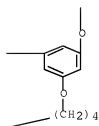
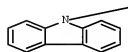
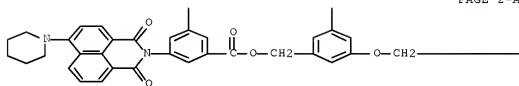
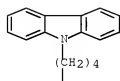


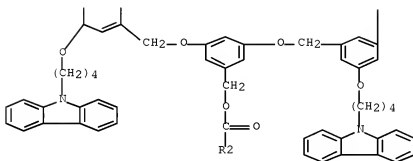
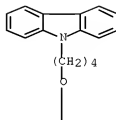
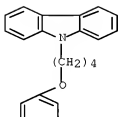
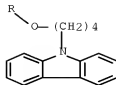


RN 727709-59-3 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, 5-[1,3-dioxo-6-(1-piperidinyl)-1H-benz[de]isoquinolin-2(3H)-yl]-, bis[3,5-bis[3,5-bis[4-(9H-carbazol-9-yl)butoxy]phenyl)methoxy]phenyl)methyl ester (9CI) (CA INDEX NAME)







OS.CITING REF COUNT: 43 THERE ARE 43 CAPLUS RECORDS THAT CITE THIS
RECORD (44 CITINGS)
REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:318610 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 141:76992
TITLE: Theoretical prediction of electronic structures of
fully π -conjugated zinc oligoporphyrins with curved
surface structures
AUTHOR(S): Yamaguchi, Yoichi
CORPORATE SOURCE: KRI, Shimogyo-ku, Kyoto, 600-8813, Japan
SOURCE: Journal of Chemical Physics (2004), 120(17),
7963-7970
CODEN: JCPSA6; ISSN: 0021-9606
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A theor. prediction of the electronic structures of fully π -conjugated zinc oligoporphyrins with curved surface, ring, tube, and ball-shaped structures was conducted as the objective for the future development of triply meso-meso-, β - β -, and β - β -linked planar zinc oligoporphyrins. The excitation energies and oscillator strengths for the optimal ring and ball structures were calculated using the time-dependent d. functional theory (DFT). Although there is an extremely small energy difference of <0.1 eV between the HOMO and the LUMO of the ring structure relative to the same-sized triply linked planar one, the Q and B bands of the former are smaller red shifted excitation energies and intensified oscillator strengths than those of the latter due to the structurally shortened effective π -conjugated lengths for the electron transition. It is expected that the ball structure becomes an excellent electron acceptor and shows the highly red shifted Q' band in the near-IR region relative to the monomer. The min. value of the HOMO-LUMO energy gaps of the infinite-length ring structures was estimated using periodic boundary conditions within the DFT, resulting in the metallic characters of both the tube structures with and without the spiral triply linked porphyrin array. The relation between the diams. and strain energies of the tube and ball structures was also examined. The present fused zinc porphyrins may become more colorful materials with new optoelectronic properties including artificial photosynthesis than the carbon nanotubes and fullerenes when the axial coordinations of the central metal of porphyrins are functionally used.

IT 713135-95-6
 RL: PRP (Properties)
 (DFT electronic structures of fully π -conjugated zinc oligoporphyrins with curved surface structures)

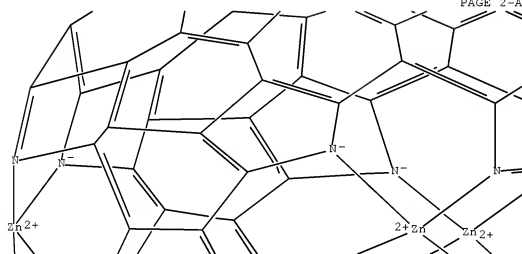
IT 713135-95-6
 RL: PRP (Properties)
 (DFT electronic structures of fully π -conjugated zinc oligoporphyrins with curved surface structures)

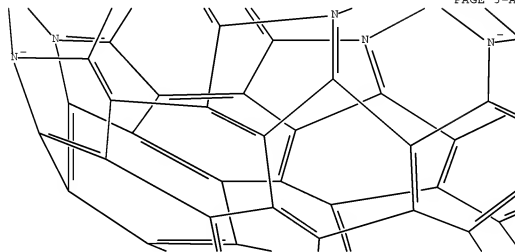
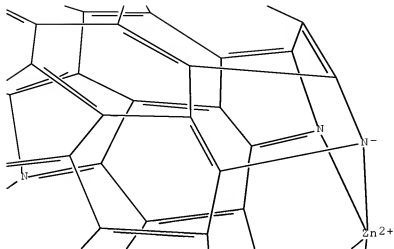
RN 713135-95-6 HCAPLUS

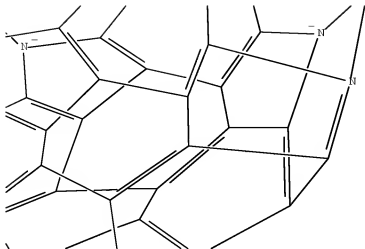
CN Tetracosazaahexazinc[5,6]fullerene-C150-Oh (9CI) (CA INDEX NAME)

PAGE 1-A









OS.CITING REF COUNT: 16 THERE ARE 16 CAPLUS RECORDS THAT CITE THIS
RECORD (16 CITINGS)
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:203785 HCAPLUS Full-text
DOCUMENT NUMBER: 140:254983
TITLE: Spirobifluorene dyes and organic electroluminescent
devices using them
INVENTOR(S): Suzuki, Koichi; Hiraoka, Mizuho; Senoo, Akihiro;
Yamada, Naoki; Negishi, Chika; Saito, Akihito
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan
SOURCE: PCT Int. Appl., 91 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004020373	A1	20040311	WO 2003-JP10258	20030812 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
JP 2004083483	A	20040318	JP 2002-246601	20020827 <--
JP 3848224	B2	20061122		
AU 2003253441	A1	20040319	AU 2003-253441	20030812 <--
US 20060134425	A1	20060622	US 2005-525327	20050222
US 7510781	B2	20090331		

PRIORITY APPLN. INFO.: JP 2002-246601 A 20020827
 WO 2003-JP10258 W 20030812

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 140:254983

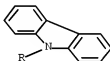
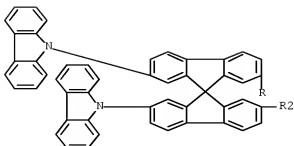
AB Provided are novel spirobifluorenes (I; A1, A2 = optionally substituted polycyclic aromatic or heterocyclic group; R1-R4 = H, organic group, substituted amino, CN, halogen). Organic electroluminescence devices using the spiro compound have an optical output with an extremely high efficiency and a high luminance, and an extremely high durability. In an example, 2,2',7,7'-tetrabromo-9,9'-spirobifluorene was treated with 9,9-dimethylfluorene-2-boronic acid in the presence of Pd(PPh3)4 to give a spirobifluorene compound containing 4 dimethylfluorene groups.

IT 214078-86-1P
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (spirobifluorene dyes and organic electroluminescent devices using them)

IT 214078-86-1P
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (spirobifluorene dyes and organic electroluminescent devices using them)

RN 214078-86-1 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-(9,9'-spirobi[9H-fluorene]-2,2',7,7'-tetrayl)tetrakis- (CA INDEX NAME)



OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD
(11 CITINGS)
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 12 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:158418 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 141:123550

TITLE: Synthesis and light-rectifying properties of novel
naphthalimide luminescence dendrimers

AUTHOR(S): Du, Pa; Zhu, Weihong; Zhao, Fei; Tian, He

CORPORATE SOURCE: Institute of Fine Chemicals, East China University of
Science and Technology, Shanghai, 200237, Peop. Rep.
China

SOURCE: Huaxue Tongbao (2004), 67(1), 43-46

CODEN: HHTPAU; ISSN: 0441-3776

PUBLISHER: Huaxue Tongbao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

OTHER SOURCE(S): CASREACT 141:123550

AB A novel series of naphthalimide dendrimers have been synthesized, onto whose
dendron novel specific function units are introduced. The absorption and
fluorescence properties of the arrays were studied and discussed. Excitation

of the terminal donor chromophores carbazole mainly results in the fluorescence of the core dye alone, whose efficiency is dependent on the dendrimer generation. The donor emission of carbazole unit is quenched due to singlet energy transfer to the core. These dendrimers show the light-harvesting and light-rectifying properties. Transient fluorescence indicates that Naphthalimidecarbazole unit in dendrimers exhibits dual-exponential decay characteristics, the shorter lifetime part is attributed to the interaction between the donor and core.

IT 724422-29-1

RL: PRP (Properties)

(synthesis and light-rectifying properties of novel naphthalimide luminescence dendrimers)

IT 724422-29-1

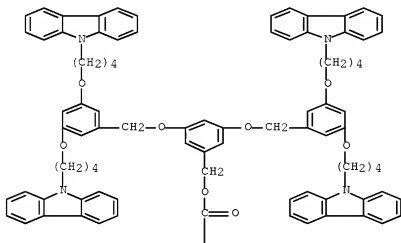
RL: PRP (Properties)

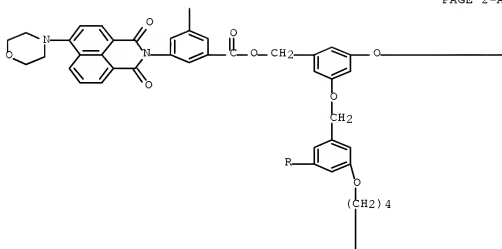
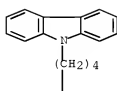
(synthesis and light-rectifying properties of novel naphthalimide luminescence dendrimers)

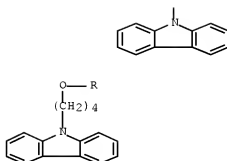
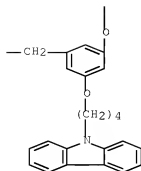
RN 724422-29-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, 5-[6-(4-morpholinyl)-1,3-dioxo-1H-benz[de]isoquinolin-2(3H)-yl]-, bis[[3,5-bis[[3,5-bis[4-(9H-carbazol-9-yl)butoxy]phenyl]methoxy]phenyl]methyl] ester (9CI) (CA INDEX NAME)

PAGE 1-A







L4 ANSWER 13 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:32979 HCAPLUS Full-text

DOCUMENT NUMBER: 140:102115

TITLE: Organic electroluminescent devices and displays having high luminescence intensity and long service life

INVENTOR(S): Yamada, Taketoshi; Kita, Hiroshi

PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 35 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004014440	A	20040115	JP 2002-169802	20020611 <--
JP 3994799	B2	20071024		
PRIORITY APPLN. INFO.:			JP 2002-169802	20020611

OTHER SOURCE(S): MARPAT 140:102115

AB The devices contain N-carbazolyl group-containing triarylboranes I (R1, R2 = substituent; R3-R6 = H, substituent; R3 and/or R4 are substituents; Ar = arylene; Ar1, Ar2 = aryl; n = 0-8; p = 1-4; q = 1-4) in electron-transport layers or emitter layers.

IT 643758-14-3

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent devices and displays containing N-carbazolyl group-containing triarylboranes)

IT 643758-14-9

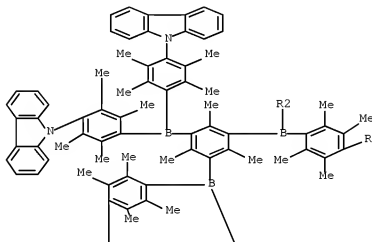
RL: DEV (Device component use); USES (Uses)

(organic electroluminescent devices and displays containing N-carbazolyl group-containing triarylboranes)

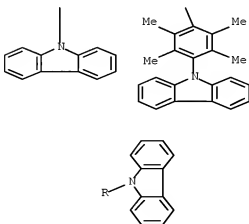
RN 643758-14-9 HCAPLUS

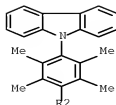
9H-Carbazole, 9,9',9'',9''',9''''',9''''''-[(2,4,6-trimethyl-1,3,5-benzenetriyl)tris[boryldynebis(2,3,5,6-tetramethyl-4,1-phenylene)]]hexakis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



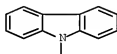
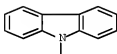


L4 ANSWER 14 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2003:870678 HCAPLUS Full-text
 DOCUMENT NUMBER: 139:371613
 TITLE: Light-emitting compositions containing calixarenes or calixresorcinarenes suitable for preparation of electroluminescent devices
 INVENTOR(S): Takahashi, Naoto; Hyakuta, Junji; Kawabata, Yuichiro
 PATENT ASSIGNEE(S): Tokuyama Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 38 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

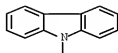
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003313546	A	20031106	JP 2002-122730	20020424 <--
PRIORITY APPLN. INFO.:			JP 2002-122730	20020424
OTHER SOURCE(S):	MARPAT 139:371613			
AB	The comps. contain 0.1-90 weight% calixarenes or calixresorcinarenes having light-emitting organic groups or charge-transferring organic groups and 10-99.9 weight% vinylcarbazole. The preferable structures for calixarenes or calixresorcinarenes are A substituted on each benzene ring of I or II (A, B, X = H, halogen, alkyl, aryl, alkoxy with ≥ 1 of A, B, and X being YmZ; Y = bivalent organic group; Z = light-emitting organic group, charge-transferring organic group; m = 0, 1; n = integer of 1-18).			
IT	546633-06-1P RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (light-emitting calixarene or calixresorcinarene comps. for electroluminescent devices)			
IT	546633-06-1P RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (light-emitting calixarene or calixresorcinarene comps. for electroluminescent devices)			
RN	546633-06-1 HCAPLUS			
CN	9H-Carbazole, 9,9',9'',9''',9''''',9''''''- (73,74,75,76,77,78,79,80,81,82,83,84- dodecapropoxytridecacyclo[6.3.1.13,7.19,13.115,19.121,25.127,31.133,37.13 9,43.145,49.151,55.157,61.163,67]tetraoctaconta- 1(73),3,5,7(84),9,11,13(83),15,17,19(82),21,23,25(81),27,29,31(80),33,35,3 7(79),39,41,43(78),45,47,49(77),51,53,55(76),57,59,61(75),63,65,67(74),69,			

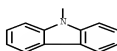
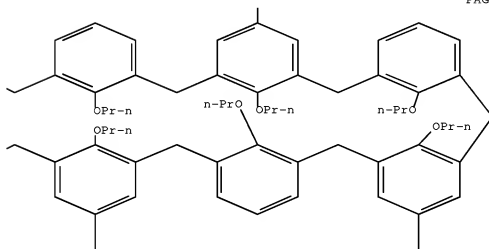
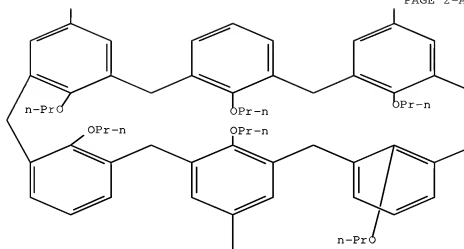
71-hexatriacontaene-5,17,29,41,53,65-hexayl)hexakis- (9CI) (CA INDEX NAME)

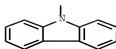
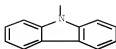
PAGE 1-A



PAGE 1-B







OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)

L4 ANSWER 15 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:861938 HCAPLUS Full-text

DOCUMENT NUMBER: 141:196735

TITLE: Highly efficient light emitters based on the spiro concept

AUTHOR(S): Spehr, Till; Pudzich, Robert; Fuhrmann, Thomas; Salbeck, Josef

CORPORATE SOURCE: Department of Science and Center for Interdisciplinary Nanostructure Science and Technology (CINSAIT), Macromolecular Chemistry and Molecular Materials, University of Kassel, Kassel, D-34109, Germany

SOURCE: Organic Electronics (2003), 4(2-3), 61-69
CODEN: OERLAU; ISSN: 1566-1199

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors present a comparison of different mol. glasses based on the spiro-concept with respect to their photoemission properties. The absorption and emission spectra as well as the photoluminescence quantum yields in solution were characterized. For thin amorphous films, prepared by vacuum vapor deposition, the authors examined amplified spontaneous emission (ASE) by optical pumping with picosecond pulses at 337 nm. Efficient ASE emission with thresholds of down to 1 $\mu\text{J}/\text{cm}^2$ was observed

IT 214078-86-1

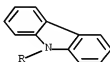
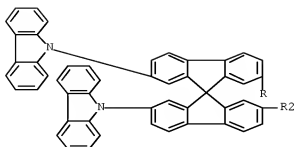
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(highly efficient light emitters based on spiro concept and their optical properties)

IT 214078-86-1

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(highly efficient light emitters based on spiro concept and their optical properties)

RN 214078-86-1 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-(9,9'-spirobi[9H-fluorene]-2,2',7,7'-tetrayl)tetrakis- (CA INDEX NAME)



OS.CITING REF COUNT: 36 THERE ARE 36 CAPLUS RECORDS THAT CITE THIS
RECORD (37 CITINGS)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 16 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:752757 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 139:283092
TITLE: Phenylazomethine-type carbazole dendrimers and durable
organic electroluminescent devices therewith
INVENTOR(S): Yamamoto, Kimitoshi; Cho, Chun-Sang; Higuchi,
Masayoshi; Kimoto, Atsushi
PATENT ASSIGNEE(S): Kanagawa Academy of Science and Technology, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003267976	A	20030925	JP 2002-66191	20020311 <--

JP 4243328 B2 20090325 JP 2002-66191 20020311
PRIORITY APPLN. INFO.:
OTHER SOURCE(S): MARPAT 139:283092

AB The devices contain, in hole-transporting layers, dendrimer I [R = A(BC₂)₂ (A = Q1; B = dendritic bridging group or H; C = N-carbazolyl)] which may form complexes with rare earth metal ions within the layers. The devices show good one-electron redox characteristics and excellent heat stability.

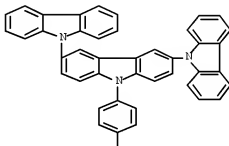
IT 606129-93-5DP, derivs. 606129-93-5P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(hole-transporting layers; durable organic EL devices containing phenylazomethine-type carbazole dendrimers as hole transporters)

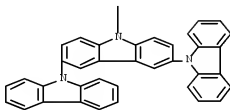
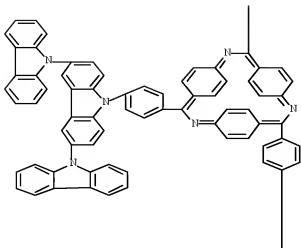
IT 606129-93-5DP, derivs. 606129-93-5P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(hole-transporting layers; durable organic EL devices containing phenylazomethine-type carbazole dendrimers as hole transporters)

RN 606129-93-5 HCAPLUS

CN 2,8,14-Triazatetracyclo[14.2.2.24,7.210,13]tetracos-
2,4,6,8,10,12,14,16,18,19,21,23-dodecaene,
3,9,15-tris(4-[9,3':6',9''-ter-9H-carbazol]-9'-ylphenyl)- (9CI) (CA INDEX NAME)

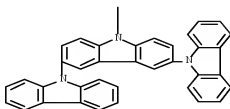
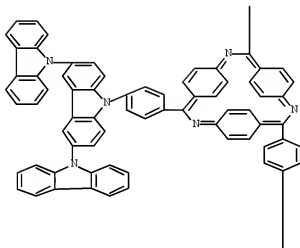
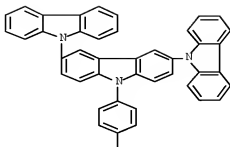
PAGE 1-A





RN 606129-93-5 HCAPLUS

CN 2,8,14-Triazatetracyclo[14.2.2.24,7.210,13]tetracos-
2,4,6,8,10,12,14,16,18,19,21,23-dodecaene,3,9,15-tris(4-[9,3':6',9''-ter-9H-carbazol]-9'-ylphenyl)- (9CI) (CA INDEX
NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)

L4 ANSWER 17 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:637807 HCAPLUS Full-text
DOCUMENT NUMBER: 139:292119
TITLE: Synthesis of novel carbazole dendrimers having a metal
coordination site
AUTHOR(S): Kimoto, Atsushi; Cho, Jun-Sang; Higuchi, Masayoshi;
Yamamoto, Kimihisa
CORPORATE SOURCE: Kanagawa Academy of Science & Technology (KAST), Keio
University, Yokohama, 223-8522, Japan
SOURCE: Chemistry Letters (2003), 32(8), 674-675
CODEN: CMLTAG; ISSN: 0366-7022
PUBLISHER: Chemical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:292119

AB We have synthesized novel carbazole dendrimers via cyclotrimerization. This
preparation of the dendrimers, especially with a higher generation, via the
cyclization reaction was found to be extremely effective. The dendrimers have
the ability to trap metal ions such as Sn²⁺ and Eu³⁺, resulting in a change in
fluorescence.

IT 606525-40-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(carbazole dendrimer preparation and coordination to europium and tin)

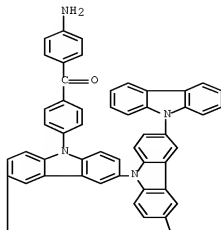
IT 606129-93-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(carbazole dendrimer preparation and coordination to europium and tin)

IT 606525-40-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(carbazole dendrimer preparation and coordination to europium and tin)

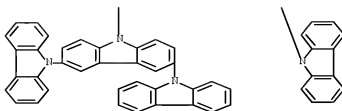
RN 608525-40-2 HCAPLUS

CN Methanone, (4-aminophenyl) [4-(6',6'''-di-9H-carbazol-9-
yl[9,3':9',3'':6'',9''':3''',9''''-quinque-9H-carbazol]-9''-yl)phenyl]-
(9CI) (CA INDEX NAME)

PAGE 1-A

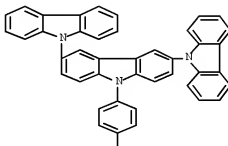


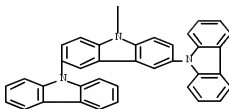
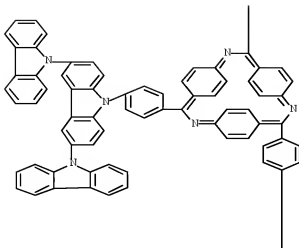
PAGE 2-A



IT 606129-93-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (carbazole dendrimer preparation and coordination to europium and tin)
 RN 606129-93-5 HCAPLUS
 CN 2,8,14-Triazatetracyclo[14.2.2.2.4,7.210,13]tetracos-
 2,4,6,8,10,12,14,16,18,19,21,23-dodecaene,
 3,9,15-tris(4-[9,3':6',9''-ter-9H-carbazol]-9'-ylphenyl)- (9CI) (CA INDEX
 NAME)

PAGE 1-A





OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD
(6 CITINGS)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 18 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:472573 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 139:60162
TITLE: Organic electroluminescent material using calixarene
or calixresorciarene derivative
INVENTOR(S): Momoda, Junji; Kawabata, Yuichiro; Otani, Toshiaki
PATENT ASSIGNEE(S): Tokuyama Corporation, Japan
SOURCE: PCT Int. Appl., 140 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2003050201	A1	20030619	WO 2002-JP12821	20021206 <--

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CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL,
PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ,
CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2002354442 A1 20030623 AU 2002-354442 20021206 <--
PRIORITY APPLN. INFO.: JP 2001-378448 A 20011212
JP 2002-120827 A 20020423
JP 2002-208112 A 20020717
WO 2002-JP12821 W 20021206

OTHER SOURCE(S): MARPAT 139:60162

AB The invention refers to an organic electroluminescent materials suitable for spin coating, comprising. a calixarene or calixresorciarene derivative with an organic luminescent group and/or an organic charge transport group, such as 4-[1-(2,2-diphenylvinyl)- biphenyl-2-phenylvinyl]phenyl.

IT 546633-06-1P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(organic electroluminescent material using calixarene or calixresorciarene derivative)

IT 546633-06-1P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

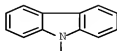
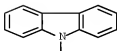
(organic electroluminescent material using calixarene or calixresorciarene derivative)

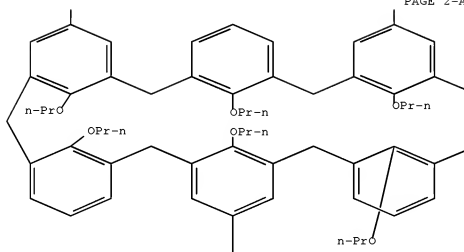
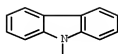
RN 546633-06-1 HCAPLUS

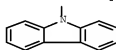
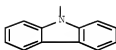
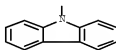
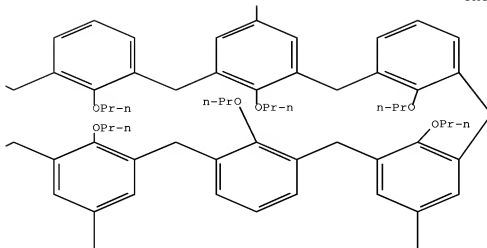
CN 9H-Carbazole, 9,9',9'',9''',9''''',9''''''-

(73,74,75,76,77,78,79,80,81,82,83,84-dodecapropoxytridecacyclo[67.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43.145,49.151,55.157,61.163,67]tetraoctaconta-1(73),3,5,7(84),9,11,13(83),15,17,19(82),21,23,25(81),27,29,31(80),33,35,37(79),39,41,43(78),45,47,49(77),51,53,55(76),57,59,61(75),63,65,67(74),69,71-hexatriacontaene-5,17,29,41,53,65-hexayl)hexakis- (9CI) (CA INDEX NAME)

PAGE 1-A







OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 19 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:369071 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 138:376130
TITLE: Organic electroluminescent device with tetraaryl
methane or tetraaryl silane
INVENTOR(S): Suzuki, Koichi; Ueno, Kazunori; Saito, Akito
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	JP 2003138251	A	20030514	JP 2001-332855	20011030 <-
	PRIORITY APPLN. INFO.:			JP 2001-332855	20011030
AB	The invention refers to an organic electroluminescent device comprising a tetraaryl methane or tetraaryl silane.				
IT	522666-17-7				
	RL: DEV (Device component use); USES (Uses) (organic electroluminescent device with tetraaryl methane or tetraaryl silane)				
IT	522666-17-7				
	RL: DEV (Device component use); USES (Uses) (organic electroluminescent device with tetraaryl methane or tetraaryl silane)				
RN	522666-17-7 HCAPLUS				
CN	9H-Carbazole, 3,3',3'',3''',3'''',3'''''',3''''''',3''''''''- [silanetetratrayltetrakis[(3,4-dimethyl-5,2-thiophenediy)]-5,1,3-benzenetriyl]octakis[9-methyl-(9CI) (CA INDEX NAME)				

The chemical structure of compound 1 is a dendritic molecule. It features a central silicon atom (Si) bonded to four 2,5-dimethylthiophene rings. Each of these rings is further substituted with a 2-methyl-1H-indenyl group. The structure is symmetrical and shows a complex arrangement of fused and linked rings, including thiophene, indene, and silicon-containing moieties. Methyl groups are indicated by 'Me' labels throughout the structure.

Cc1ccc(cc1)-c2cc3c(cc2)nc(C)c3

(1 CITINGS)

L4 ANSWER 20 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:360943 HCAPLUS Full-text

DOCUMENT NUMBER: 139:94251

TITLE: Ruthenium(II) Dendrimers Containing Carbazole-Based Chromophores as Branches

AUTHOR(S): McClenaghan, Nathan D.; Passalacqua, Rosalba; Loiseau, Frederique; Campagna, Sebastiano; Verheyde, Bert; Hameurlaine, Ahmed; Dehaen, Wim

CORPORATE SOURCE: Dipartimento di Chimica Inorganica Chimica Analitica e Chimica Fisica, Universita di Messina, Messina, I-98166, Italy

SOURCE: Journal of the American Chemical Society (2003), 125(18), 5356-5365
CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:94251

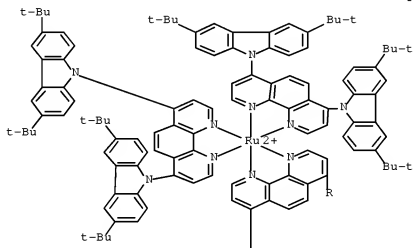
AB Three new luminescent and redox-active Ru(II) complexes containing novel dendritic polypyridine ligands were synthesized, and their absorption spectra, luminescence properties (both at room temperature in fluid solution and at 77 K in rigid matrix), and redox behavior were studied. The dendritic ligands are made of 1,10-phenanthroline coordinating subunits and of carbazole groups as branching sites. The first and second generation species of this novel class of dendritic ligands, I (L1) and II (L2), resp. were prepared and employed. The metal dendrimers studied are [Ru(bpy)2(L1)]2+ (1; bpy = 2,2'-bipyridine), [Ru(bpy)2(L2)]2+ (2), and [Ru(L1)3]2+ (3). For the sake of completeness and comparison purposes, also the absorption spectra, redox behavior, and luminescence properties of L1 and L2 were studied, together with the properties of 3,6-di(tert-butyl)carbazole (L0) and [Ru(bpy)2(phen)]2+ (4, phen = 1,10-phenanthroline). The absorption spectra of the free dendritic ligands show features which can be assigned to the various subunits (i.e., carbazole and phenanthroline groups) and addnl. bands at lower energies (at $\lambda > 300$ nm) which are assigned to carbazole-to-phenanthroline charge-transfer (CT) transitions. These latter bands are significantly red shifted upon acid and/or Zn acetate addition. Both L1 and L2 exhibit relatively intense luminescence at room temperature in fluid solution (lifetimes in the nanosecond time scale, quantum yields of the order of 10⁻²-10⁻¹) and at 77 K in rigid matrix (lifetimes in the millisecond time scale). Such a luminescence is assigned to CT states at room temperature and to phenanthroline-centered $\pi-\pi^*$ triplet levels at 77 K. The room-temperature luminescence of L1 and L2 is totally quenched by acid or Zn acetate. The metal dendrimers exhibit the typical absorption and luminescence properties of Ru(II) polypyridine complexes. In particular, metal-to-ligand charge-transfer (MLCT) bands dominate the visible absorption spectra, and formally triplet MLCT levels govern the excited-state properties. Excitation spectroscopy evidences that all the light absorbed by the dendritic branches is transferred with unitary efficiency to the luminescent MLCT states in 1-3, showing that the new metal dendrimers can be regarded as efficient light-harvesting antenna systems. All the free ligands and metal dendrimers exhibit a rich redox behavior (except L2 and 3, whose redox behavior was not studied because of solubility reasons), with clearly attributable reversible carbazole- and metal-centered oxidation and polypyridine-centered reduction processes. The electronic interaction between the carbazole redox-active sites of the dendritic ligands is affected by Ru(II) coordination.

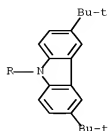
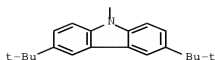
IT 551951-05-1P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP

(Preparation); PROC (Process)
 (preparation, UV-visible spectra, luminescence, and electrochem. redox)
 IT 551951-02-1P
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation); PROC (Process)
 (preparation, UV-visible spectra, luminescence, and electrochem. redox)
 RN 551951-02-1 HCAPLUS
 CN Ruthenium(2+), tris[4,7-bis[3,6-bis(1,1-dimethylethyl)-9H-carbazol-9-yl]-
 1,10-phenanthroline-κN1,κN10]-, (OC-6-11)-,
 bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)
 CM 1
 CRN 551951-01-0
 CMF C156 H162 N12 Ru
 CCI CCS

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CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 21 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2003:259840 HCAPLUS Full-text
 DOCUMENT NUMBER: 138:294686
 TITLE: Organic light-emitting diodes having an interface layer between the hole-transporting layer and the light-emitting layer
 INVENTOR(S): Liao, L. S.; Madathil, J. K.; Klubek, K. P.; Tang, C. W.
 PATENT ASSIGNEE(S): Eastman Kodak Company, USA
 SOURCE: Eur. Pat. Appl., 10 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1298737	A2	20030402	EP 2002-78794	20020916 <--
EP 1298737	A3	20051214		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

US 20030075720	A1	20030424	US 2001-966618	20010928 <--
US 6603150	B2	20030805		
TW 552727	B	20030911	TW 2002-118212	20020813 <--
JP 2003123984	A	20030425	JP 2002-280947	20020926 <--

PRIORITY APPLN. INFO.: US 2001-966618 A 20010928

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Organic light-emitting devices are described which comprise a substrate; an anode; a hole-transporting layer having a hole-transporting organic compound; an interface layer in a range of thickness between 0.1 nm to 5 nm; a light-emitting layer having a light-emitting organic compound; an electron-transporting layer having an electron-transporting organic compound; and a cathode; where the interface layer contains a compound having an ionization potential > that of the organic compound of the hole-transporting layer, and an energy bandgap \geq that of the organic compound of the light-emitting layer.

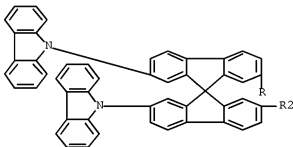
IT 214078-86-1
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (interfacial layer; organic light-emitting diodes having interface layer between hole-transporting layer and light-emitting layer)

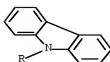
IT 214078-86-1
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (interfacial layer; organic light-emitting diodes having interface layer between hole-transporting layer and light-emitting layer)

RN 214078-86-1 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-(9,9'-spirobi[9H-fluorene]-2,2',7',7'-tetrayl)tetrakis- (CA INDEX NAME)

PAGE 1-A





OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD
(9 CITINGS)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 22 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:114466 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 139:261115

TITLE: Synthesis of soluble oligocarbazole derivatives

AUTHOR(S): Hameurlaine, Ahmed; Dehaen, Wim

CORPORATE SOURCE: Department of Chemistry, Laboratory of Organic
Synthesis, K. U. Leuven, Louvain, B-3001, Belg.

SOURCE: Tetrahedron Letters (2003), 44(5), 957-959

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:261115

AB 3,6-Disubstituted carbazole building blocks are coupled via copper-catalyzed Ullmann reactions to afford trimeric and heptameric carbazoles with excellent solubilities in organic solvents. Alternatively, oligomeric carbazoles with phenylene spacers, that are more stable towards oxidation, can be obtained via palladium-catalyzed Suzuki coupling reactions.

IT 601454-42-6P

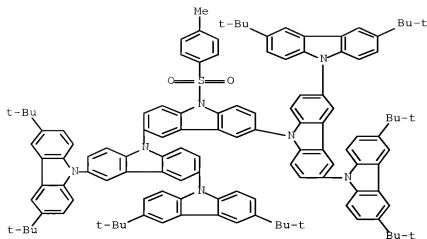
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of soluble oligocarbazole synthons via copper-catalyzed Ullmann reactions or palladium-catalyzed Suzuki coupling reactions)

IT 601454-42-6P

RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of soluble oligocarbazole synthons via copper-catalyzed Ullmann reactions or palladium-catalyzed Suzuki coupling reactions)

RN 601454-42-6 HCAPLUS

CN 9,3':9',3'':6'',9''':3''',9''''-Quinque-9H-carbazole,
6',6''''-bis[3,6-bis(1,1-dimethylethyl)-9H-carbazol-9-yl]-3,3''',6,6''''-
tetrakis(1,1-dimethylethyl)-9'''-[(4-methylphenyl)sulfonyl]- (CA INDEX
NAME)



OS.CITING REF COUNT: 28 THERE ARE 28 CAPLUS RECORDS THAT CITE THIS
RECORD (29 CITINGS)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 23 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:193372 HCAPLUS Full-text
DOCUMENT NUMBER: 136:254348
TITLE: Luminescent device
INVENTOR(S): Nishi, Takeshi; Seo, Satoshi; Minakami, Mayumi
PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002075645	A	20020315	JP 2000-258356	20000829 <--
JP 4554047	B2	20100929		
US 20020034659	A1	20020321	US 2001-941048	20010828 <--
PRIORITY APPLN. INFO.:			JP 2000-258356	A 20000829

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

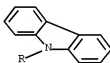
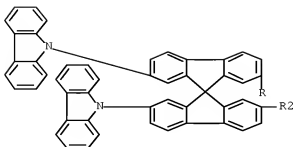
AB The invention refers to an electroluminescent device comprising a organic luminescent material which converts triplet excitation energy into luminescence, and a spiro compds. I (R = 9-azafluorene, phenylnaphthylamine, and 4-phenyl-5-(4-tert-butylphenyl)-1,2,4-triazole) as a host material for a bright low-energy display device.

IT 214078-86-1
RL: DEV (Device component use); USES (Uses)
(luminescent device)

IT 214078-86-1
RL: DEV (Device component use); USES (Uses)
(luminescent device)

RN 214078-86-1 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-(9,9'-spirobi[9H-fluorene]-2,2',7,7'-tetrayl)tetrakis- (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD
(4 CITINGS)

L4 ANSWER 24 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2001:735105 HCAPLUS Full-text

DOCUMENT NUMBER: 136:102365

TITLE: Syntheses of novel carbazolyacetylene-derived macrocycles

AUTHOR(S): Maruyama, Sumio; Hokari, Hirofumi; Wada, Tatsuo; Sasabe, Hiroyuki

CORPORATE SOURCE: Nanotechnology Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan Science and Technology Corporation (JST), Tsukuba, 305-8565, Japan

SOURCE: Synthesis (2001), (12), 1794-1799

CODEN: SYNTBF; ISSN: 0039-7881

PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 136:102365

AB The syntheses of novel cyclic oligomers based on the carbazolyacetylene unit are described. The desired cyclic tetramer could be synthesized in 14.3%

yield by the reaction of 3,6-diethynyl-9-tetradecylcarbazole and 3,6-bis(3'-iodo-9'-tetradecylcarbazolyl)-9-tetradecylcarbazole in the presence of Pd(PPh₃)₄/CuI as catalysts under high dilution conditions and purified by column chromatog. and isolated by preparative gel permeation chromatog. Besides the tetramer, a cyclic octamer was also isolated in 5.4% yield.

IT 245648-37-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

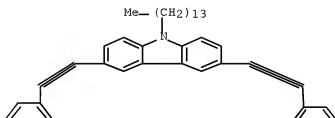
IT 245648-37-7P

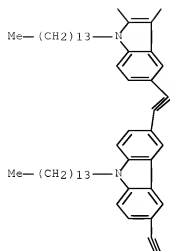
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 245648-37-7 HCAPLUS

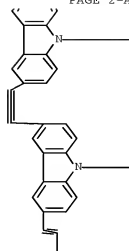
CN 1,71:3,5:8,10:12,14:17,19:21,23:26,28:30,32:35,37:39,41:44,46:48,50:53,55:
57,59:62,64:66,68-Hexadecaethenotetrahexaconta[1,2-c:9,10-c':17,18-
c'':25,26-c''':33,34-c''''':41,42-c''''':49,50-c''''':57,58-
c''''''']octapyrrole, 6,7,15,16,24,25,33,34,42,43,51,52,60,61,69,70-
hexadecadehydro-2,11,20,29,38,47,56,65-octahydro-2,11,20,29,38,47,56,65-
octatetradecyl- (9CI) (CA INDEX NAME)

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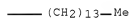
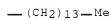




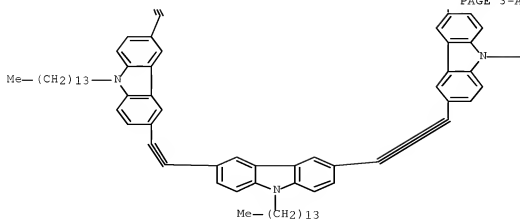
PAGE 2-A



PAGE 2-B



PAGE 3-A



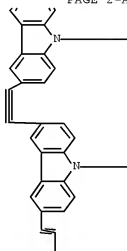
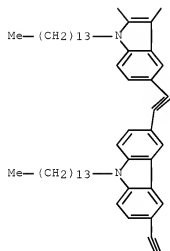
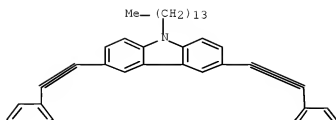
— (CH₂)₁₃—Me

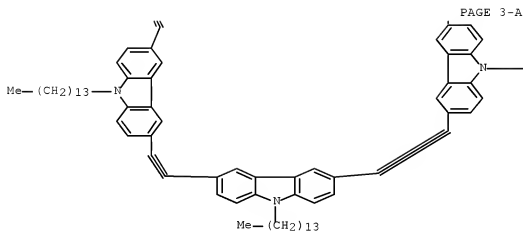
OS.CITING REF COUNT: 17 THERE ARE 17 CAPLUS RECORDS THAT CITE THIS
RECORD (17 CITINGS)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 25 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2000:869602 HCAPLUS Full-text
DOCUMENT NUMBER: 134:49288
TITLE: Cyclic organic compound for electroluminescence device
material
INVENTOR(S): Maruyama, Sumio; Wada, Tatsuo; Shobu, Hiroyuki
PATENT ASSIGNEE(S): Institute of Physical and Chemical Research, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000344777	A	20001212	JP 1999-151099	19990531 <--
JP 3712037	B2	20051102		

PRIORITY APPLN. INFO.: JP 1999-151099 19990531
AB The cyclic organic compound for electroluminescence device material has
structure I (R = alkyl; n = 1,5,9,13, 17). The cyclic compound has the low
ionization potential and is suitable for spin coating.
IT 245648-37-7P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(cyclic organic compound for electroluminescence device material)
IT 245648-37-7P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(cyclic organic compound for electroluminescence device material)
RN 245648-37-7 HCAPLUS
CN 1,71:3,5:8,10:12,14:17,19:21,23:26,28:30,32:35,37:39,41:44,46:48,50:53,55:
57,59:62,64:66,68-Hexadecaethenotetrahexaconta[1,2-c:9,10-c':17,18-
c'':25,26-c''':33,34-c''''':41,42-c''''':49,50-c''''':57,58-
c''''''':octapyrrole, 6,7,15,16,24,25,33,34,42,43,51,52,60,61,69,70-
hexadecadehydro-2,11,20,29,38,47,56,65-octahydro-2,11,20,29,38,47,56,65-
octatetradecyl- (9CI) (CA INDEX NAME)



— (CH₂)₁₃—Me—— (CH₂)₁₃—Me—— (CH₂)₁₃—Me

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)

L4 ANSWER 26 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2000:36977 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 133:59119

TITLE: New organic photorefractive material composed of a
charge-transporting dendrimer and a stilbene
chromophore

AUTHOR(S): Bai, Jaeil; Ducharme, Stephen; Leonov, Alexei G.; Lu,

CORPORATE SOURCE: Liu; Takacs, James M.
Dep. Phys. Astron., Univ. of Nebraska, Lincoln, NE,
USA

SOURCE: Proceedings of SPIE-The International Society for
Optical Engineering (1999), 3799 (Organic
Photorefractives, Photoreceptors, Waveguides, and
Fibers), 22-30
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

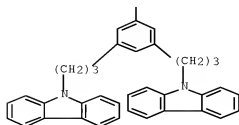
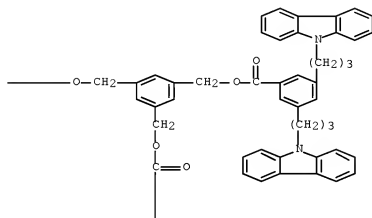
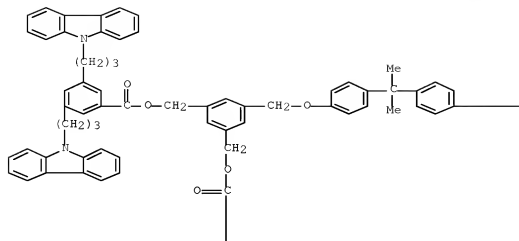
AB Organic photorefractive composites [guest-host systems] consisting of charge
transporting dendrimers [CZD8E] highly doped (37%) with a stilbene or a diazo
nonlinear optic chromophore [EHDNPB] were prepared based on a mol. design to
improve charge transport by reducing inhomogeneity. The structure of the
materials provides for control of the orientation of charge transport agents
and the charge transport mechanism can be systematically studied. The
dendrimer containing 8 carbazole groups was prepared by a divergent pathway;
diethyl-5-(bromomethyl)isophthalate was coupled to bisphenol A, the ester
groups were reduced to produce a core with four hydroxyl end groups, then 3,5-
bis(3-carbazolylpropyl)benzoic acid was incorporated by esterification in
presence of 4-(dimethylamino)-pyridinium 4-toluenesulfonate and N,N-
dicyclohexyl carbodiimide. The EHDNPB chromophore was prepared from 2,5-
dimethyl-4-(p-nitrophenylazo)phenol, the ethylhexyl group was introduced by
alkylation of the phenol using 2-ethylhexyl bromide, to produce EHDNPB. The
stilbene chromophore was prepared from N-phenyl-N,N-diethanolamine through
esterification with tri-Me acetyl chloride, carbonylation, and condensation
with 4-nitrophenylacetic acid. Composites of dendrimers with 37% EHDNPB and 3%
TNF [2,4,7-Trinitrofluorenone] chromophore were also studied. The sp.
photocond. of the photorefractive composite with stilbene chromophore is 1.67×10^{-12} (Ω -cm)-1(W/cm²)-1, the linear electrooptic response is 0.29 pm/V at
66.7 kV/cm bias field, while those of the EHDNPB composite are 0.3×10^{-12} (Ω -
cm)-1(W/cm²)-1 and 0.22 pm/V at 66.7 kV/cm bias field.

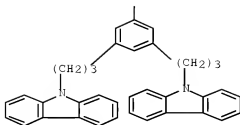
IT 275823-90-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(dendritic; preparation of dendrimer and chromophores and photorefractive
properties of charge-transport dendrimer and stilbene or nitrophenylazo
chromophore composites)

IT 275823-90-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(dendritic; preparation of dendrimer and chromophores and photorefractive
properties of charge-transport dendrimer and stilbene or nitrophenylazo
chromophore composites)

RN 275823-90-0 HCAPLUS

CN Benzoic acid, 3,5-bis[3-(9H-carbazol-9-yl)propyl]-,
(1-methylethylidene)bis[4,1-phenyleneoxymethylene]-5,1,3-
benzenetriylbis(methylene)] ester (9CI) (CA INDEX NAME)





OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 27 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1999:784586 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 132:108420
TITLE: Synthesis and Characterization of Monodendrons Based
on 9-Phenylcarbazole
AUTHOR(S): Zhu, Zhengguo; Moore, Jeffrey S.
CORPORATE SOURCE: Roger Adams Laboratory Departments of Chemistry and
Materials Science & Engineering and the Beckman
Institute for Advanced Science and Technology,
University of Illinois at Urbana-Champaign, Urbana,
IL, 61801, USA
SOURCE: Journal of Organic Chemistry (2000), 65(1),
116-123
CODEN: JOCEAH; ISSN: 0022-3263
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A series of 9-phenylcarbazole ethynylene monodendrons have been prepared by palladium-catalyzed coupling reactions creating well-organized arrays of redox centers. The tert-Bu groups attached to the 3,6-positions of peripheral 9-phenylcarbazole monomers provide adequate solubility to a limited degree. Trimer and 7-mer monodendrons were prepared using a monomer with 3,3-diethyltriazene at its focal point. To facilitate purification, the synthesis of 15-mer monodendron, however, required a monomer bearing a 3-hydroxy-3-methyl-but-1-ynyl group at its focal point as a masking group for the terminal acetylene functionality. Although the solubility was limited, high generation monodendrons were found to be readily soluble in carbon disulfide, a solvent of high polarizability. Spectroscopic studies showed that there is limited through-bond conjugation over the monodendrons, but fluorescence studies suggested the presence of long-range through-space interactions in the higher members of the series.

IT 255829-35-1P 255829-47-1P 255829-48-2DP,
reaction products with ethynylene group-containing phenylcarbazole derivative
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)

(synthesis and characterization of monodendrons based on
9-phenylcarbazole and containing ethynylene groups)

IT 255829-36-8P 255829-48-2DP, reaction products with
ethynylene group-containing phenylcarbazole derivative
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis and characterization of monodendrons based on
9-phenylcarbazole and containing ethynylene groups)

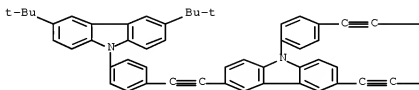
IT 255829-35-7P 255829-47-1P 255829-48-2DE,
reaction products with ethynylene group-containing phenylcarbazole derivative
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(synthesis and characterization of monodendrons based on
9-phenylcarbazole and containing ethynylene groups)

RN 255829-35-7 HCAPLUS

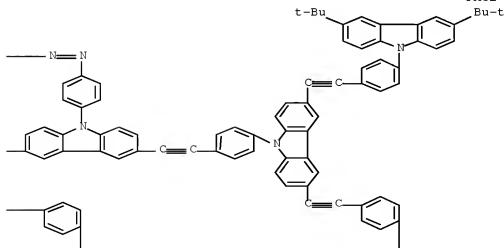
CN 9H-Carbazole, 3,6-bis[2-[4-[3,6-bis[2-[4-[3,6-bis(1,1-dimethylethyl)-9H-
carbazol-9-yl]phenyl]ethynyl]-9H-carbazol-9-yl]phenyl]ethynyl]-9-[4-(3,3-
diethyl-1-triazen-1-yl)phenyl]- (CA INDEX NAME)

PAGE 1-A

Et₂N—

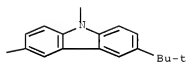


PAGE 1-B

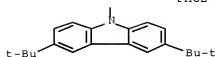


PAGE 2-A

t-Bu —



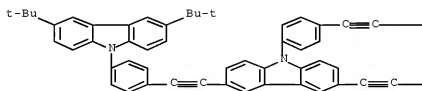
PAGE 2-B

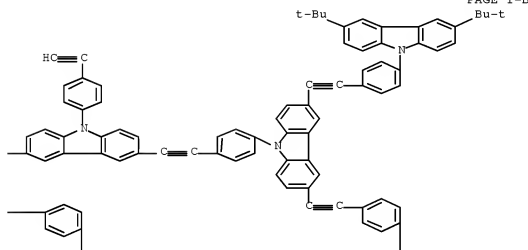
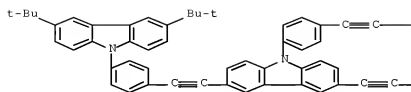


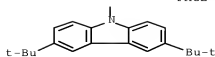
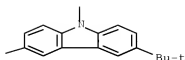
RN 255829-47-1 HCAPLUS
 CN 9H-Carbazole, 3,6-bis[2-[4-[3,6-bis[2-[4-[3,6-bis(1,1-dimethylethyl)-9H-carbazol-9-yl]phenyl]ethynyl]-9H-carbazol-9-yl]phenyl]ethynyl]-9-[4-[(trimethylsilyl)ethynyl]phenyl]- (CA INDEX NAME)

PAGE 1-A

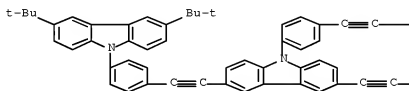
Me₃Si —

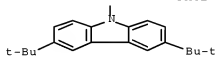
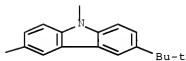
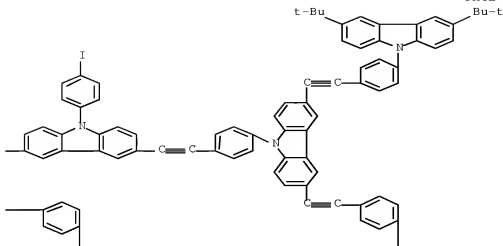






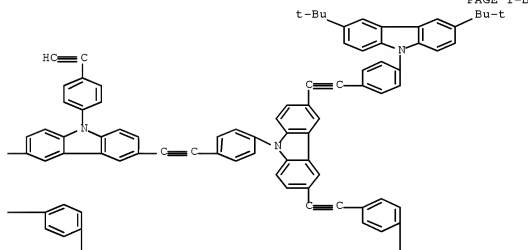
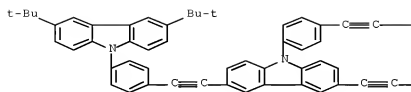
IT 255829-36-8P 255829-48-2DP, reaction products with
ethynylene group-containing phenylcarbazole derivative
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis and characterization of monodendrons based on
9-phenylcarbazole and containing ethynylene groups)
RN 255829-36-8 HCAPLUS
CN 9H-Carbazole, 3,6-bis[2-[4-[3,6-bis[2-[4-[3,6-bis(1,1-dimethylethyl)-9H-
carbazol-9-yl]phenyl]ethynyl]-9H-carbazol-9-yl]phenyl]ethynyl]-9-(4-
iodophenyl)- (CA INDEX NAME)

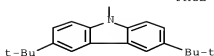
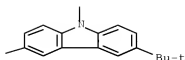




RN 255829-48-2 HCAPLUS

CN 9H-Carbazole, 3,6-bis[2-[4-[3,6-bis[2-[4-[3,6-bis(1,1-dimethylethyl)-9H-carbazol-9-yl]phenyl]ethynyl]-9H-carbazol-9-yl]phenyl]ethynyl]-9-(4-ethynylphenyl)- (CA INDEX NAME)





OS.CITING REF COUNT: 85 THERE ARE 85 CAPLUS RECORDS THAT CITE THIS
RECORD (89 CITINGS)
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 28 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1999:513731 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 131:272274
TITLE: Synthesis of cyclic oligomer having a low ionization
potential
AUTHOR(S): Maruyama, Sumio; Hokari, Hirofumi; Tao, Xu-Tang;
Gunji, Atsushi; Wada, Tatsuo; Sasabe, Hiroyuki
CORPORATE SOURCE: The Institute of Physical and Chemical Research
(RIKEN), Saitama, 351-0198, Japan
SOURCE: Chemistry Letters (1999), (8), 731-732
CODEN: CMLTAG; ISSN: 0366-7022
PUBLISHER: Chemical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

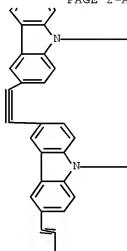
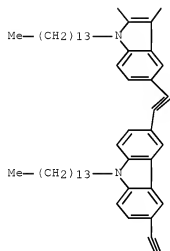
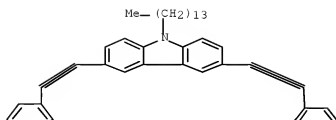
AB Synthesis of cyclic oligomer having a low ionization potential (Ip) is
described. Ip of this cyclic oligomer was determined as 5.05 eV, which is
lowered than that of corresponding poly(3,6-ethynyl-9-tetradecylcarbazole)
(5.24 eV). This result indicated that the cyclic oligomer would be new
candidate for hole injection and/or transport material in organic light-
emitting diodes.

IT 245648-37-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(cyclic octamer; synthesis of cyclic ethynylarbazole oligomers having a
low ionization potential)

IT 245648-37-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(cyclic octamer; synthesis of cyclic ethynylarbazole oligomers having a
low ionization potential)

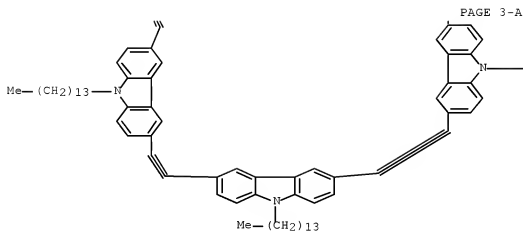
RN 245648-37-7 HCAPLUS

CN 1,71:3,5:8,10:12,14:17,19:21,23:26,28:30,32:35,37:39,41:44,46:48,50:53,55:
57,59:62,64:66,68-Hexadecaethenotetrahexaconta[1,2-c':9,10-c':17,18-
c':25,26-c':33,34-c':41,42-c':49,50-c':57,58-
c':65]octapyrrole, 6,7,15,16,24,25,33,34,42,43,51,52,60,61,69,70-
hexadecadehydro-2,11,20,29,38,47,56,65-octahydro-2,11,20,29,38,47,56,65-
octatetradecyl- (9CI) (CA INDEX NAME)



— (CH₂)₁₃—Me

— (CH₂)₁₃—Me



— (CH₂)₁₃—Me

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)
 REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 29 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1999:444774 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 131:199822
 TITLE: Molecular and electronic structure of several heterofullerene BNC58 and B2N2C56 oligomers and

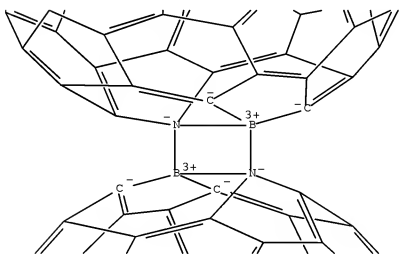
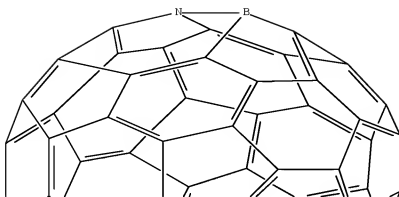
[B2N2C56]_n macromolecule
 AUTHOR(S): Gal'pern, E. G.; Stankevich, I. V.; Chistyakov, A. L.; Chernozatonskii, L. A.
 CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia
 SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (1999), 48(3), 428-432
 CODEN: RCBUEY; ISSN: 1066-5285
 PUBLISHER: Consultants Bureau
 DOCUMENT TYPE: Journal
 LANGUAGE: English

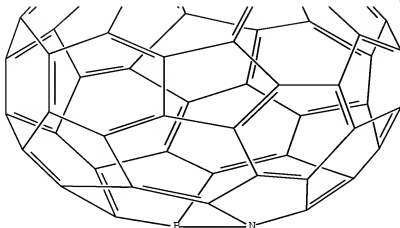
AB Mol. and electronic structure of heterofullerene BNC58 (C5) and B2N2C56 (C2h) monomers, B2N2C116 and B4N4C112 dimers, and B6N6C168 trimer (the last three mols. with C2h symmetry) was simulated by the MNDO method. Clusters BNC58 and B2N2C56 are formed by replacement of carbon atoms participating in one or two of the most distant oppositely lying (6,6)-type C-C bonds in fullerene C60 by B and N atoms. In one of the two studied isomers of the B2N2C116 dimer, the monomers are linked by the four-membered carbon cycle, while the heteroatoms form the most distant oppositely lying bonds of the dimer. In the other isomer of the B2N2C116 dimer, as well as in the B4N4C112 dimer and B6N6C168 trimer, the monomers are linked by four-membered B2N2 cycles with alternation of the atoms. For all the systems studied, the optimum geometric parameters, heats of formation, ionization potentials, and atomic charges were calculated. Dimerization energies of heterofullerenes BNC58 and B2N2C56 lie in the range from 33 to 49 kcal mol⁻¹. It was found that the B2N2C116 dimer, in which the monomers are linked by the four-membered carbon cycle, is the most stable system. In the case of B2N2C56 trimerization, the energy gain (compared to the triple monomer energy) is about twice as large as the dimerization energy. Mol. structure of the quasi-linear [B2N2C56]_n macromol. was simulated, and extended Huckel calcns. of its energy band structure by the crystal orbital method were performed. It was found that the electron energy spectrum is of semiconducting type (the band gap is equal to 1.27 eV).

IT 241495-57-8 241495-58-9
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (mol. and electronic structure of several boron nitrogen heterofullerene oligomers and macromol.)

IT 241495-57-8 241495-58-9
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (mol. and electronic structure of several boron nitrogen heterofullerene oligomers and macromol.)

RN 241495-57-8 HCAPLUS
 CN 1,9':9,1'-Bi-1,52-diaza-9,60-dibora[5,6]fullerene-C60-1h (9CI) (CA INDEX NAME)





RN 241495-58-9 HCAPLUS
 CN [1,1':9,9':52,1''':60,9'']Ter-1,52-diaza-9,60-dibora[5,6]fullerene-C60-1h
 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
 (3 CITINGS)

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 30 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:661558 HCAPLUS Full-text

DOCUMENT NUMBER: 129:297239

ORIGINAL REFERENCE NO.: 129:60475a

TITLE: Spiro compounds and their uses

INVENTOR(S): Salbeck, Josef; Lupo, Donald

PATENT ASSIGNEE(S): Hoechst Research and Technology Deutschland GmbH and
 Co. K.-G., Germany

SOURCE: PCT Int. Appl., 68 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9842655	A1	19981001	WO 1998-EP1559	19980318 <--
W: CN, JP, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE 19711714	A1	19981001	DE 1997-19711714	19970320 <--
EP 968175	A1	20000105	EP 1998-916989	19980318 <--
EP 968175	B1	20011212		
R: DE, FR, GB, NL				
JP 2001518913	T	20011016	JP 1998-544419	19980318 <--
JP 4188426	B2	20081126		
US 20030111107	A1	20030619	US 2002-205945	20020726 <--
US 6822094	B2	20041123		
PRIORITY APPLN. INFO.:			DE 1997-19711714	A 19970320

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 129:297239

AB Spirobifluorene derivs. (I; K1,L,M,N1,R1-4 = H, NO2, CN, F, Cl, branched or linear alkyl containing O, S, CO2, O2C, substituted N, SiMe3, unsatd. groups, or F and/or Cl, an amino group- or arylamino group-containing aromatic group, aryl group, or heterocyclyl-containing group) are suitable for use as charge-transfer materials, especially for photovoltaic cells, and as electroluminescent materials.

IT 214078-86-1P

RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of; for use as charge-transfer materials)

IT 214078-86-1P

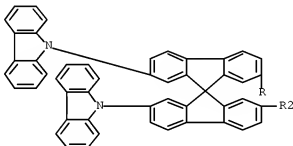
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of; for use as charge-transfer materials)

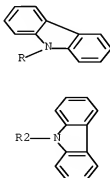
RN 214078-86-1 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-(9,9'-spirobi[9H-fluorene]-2,2',7,7'-tetrayl)tetrakis- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD
(6 CITINGS)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 31 OF 45 HCAPLUS COPYRIGHT 2010 ACS ON STN

ACCESSION NUMBER: 1997:434260 HCAPLUS Full-text

DOCUMENT NUMBER: 127:149471

ORIGINAL REFERENCE NO.: 127:28881a,28884a

TITLE: Synthesis and characterization of a novel carbazole
cyclic oligomer and main-chain polymer

AUTHOR(S): Zhang, Yadong; Wada, Tatuso; Sasabe, Hiroyuki

CORPORATE SOURCE: Frontier Res. Program, Inst. Phys. Chem. Res. (RIKEN),
Wako, 351-01, Japan

SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry
(1997), 35(10), 2041-2047

CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: Wiley

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The efficient synthesis of a novel cyclic carbazole tetramer and carbazole
main-chain polymer via the Knoevenagel condensation was developed. The
carbazole cyclic tetramer could be obtained in a high yield by a one-stage
Knoevenagel condensation of 3,6-diformyl-9-heptylcarbazole and 3,6-
bis(cyanoacetoxymethyl)-9-heptylcarbazole in THF (THF) without the use of the
high-dilution principle. The corresponding carbazole main-chain polymer could
also be obtained as a main product by a two-stage Knoevenagel
polycondensation. Detailed structural characterization of this novel oligomer
by spectroscopy and elemental anal. confirmed the cyclic structure. The
corresponding main-chain polymer with large mol. weight was amorphous.
Studies on the nonlinear optical and photorefractive properties of these
materials are in progress.

IT 174846-45-8P

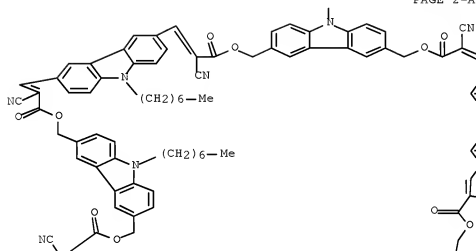
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(Knoevenagel polycondensation in preparation and characterization of
carbazole derivative cyclic tetramer and main-chain polymer)

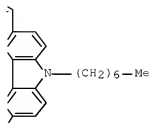
IT 174846-45-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(Knoevenagel polycondensation in preparation and characterization of
carbazole derivative cyclic tetramer and main-chain polymer)

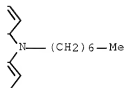
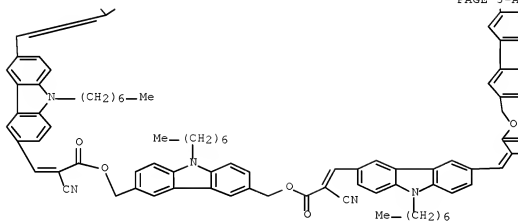
RN 174846-45-8 HCAPLUS

CN 1,95:3,5:11,13:15,17:23,25:27,29:35,37:39,41:47,49:51,53:59,61:63,65:71,73
:75,77:83,85:87,89-Hexadecaetheno-6H,8H,22H,32H,46H,56H,70H,80H-
[1,10,23,32,45,54,67,76]octaoxacyclooctaoctacontino[5,6-c:16,17-c':27,28-
c'':38,39-c''':49,50-c''''':60,61-c''''':71,72-c''''':82,83-
c''''':octapyrrole-9,19,33,43,57,67,81,91-octacarbonitrile,
2,14,26,38,50,62,74,86-octaheptyl-
2,14,20,26,30,38,44,50,54,62,68,74,78,86,92,94-hexadecahydro-
8,20,32,44,56,68,80,92-octaoxo- (9CI) (CA INDEX NAME)





—CN



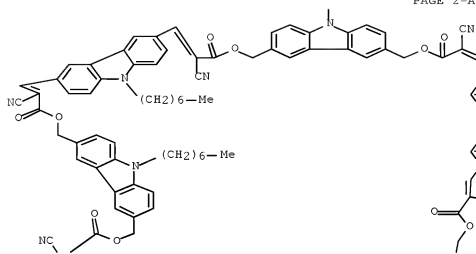
—CN

(3 CITINGS)

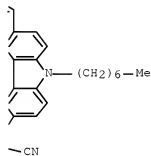
L4 ANSWER 32 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1996:185949 HCAPLUS Full-text
 DOCUMENT NUMBER: 124:233344
 ORIGINAL REFERENCE NO.: 124:43255a,43258a
 TITLE: A new synthetic approach to macrocyclic molecules and
 main-chain polymers containing carbazole moieties
 AUTHOR(S): Zhang, Yadong; Wada, Tatsuo; Sasabe, Hiroyuki
 CORPORATE SOURCE: Frontier Research Program, The Institute Physical and
 Chemical Research, Wako, 351-01, Japan
 SOURCE: Chemical Communications (Cambridge) (1996),
 (5), 621-2
 CODEN: CHCOFS; ISSN: 1359-7345
 PUBLISHER: Royal Society of Chemistry
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB New macrocyclic mols. and main-chain polymers containing carbazole substituted
 with two acceptor groups are synthesized by the Knoevenagel condensation
 reaction of 9-heptyl-3,6-diformylcarbazole and 9-heptyl-3,6-
 bis(cyanoacetoxymethyl)carbazole. The main-chain polymer had glass
 temperature .apprx.134°.
 IT 174846-45-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of carbazole-containing macrocyclic mols. and main-chain
 polymers)
 IT 174846-45-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of carbazole-containing macrocyclic mols. and main-chain
 polymers)
 RN 174846-45-8 HCAPLUS
 CN 1,95:3,5:11,13:15,17:23,25:27,29:35,37:39,41:47,49:51,53:59,61:63,65:71,73
 :75,77:83,85:87,89-Hexadecaetheno-6H,8H,22H,32H,46H,56H,70H,80H-
 [1,10,23,32,45,54,67,76]octaoxacyclooctaoctacontino[5,6-c:16,17-c':27,28-
 c':38,39-c':49,50-c':51:60,61-c':71,72-c':82,83-
 c':94]octapyrrole-9,19,33,43,57,67,81,91-octacarbonitrile,
 2,14,26,38,50,62,74,86-octaheptyl-
 2,14,20,26,30,38,44,50,54,62,68,74,78,86,92,94-hexadecahydro-
 8,20,32,44,56,68,80,92-octaoxo- (9CI) (CA INDEX NAME)

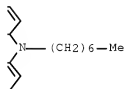
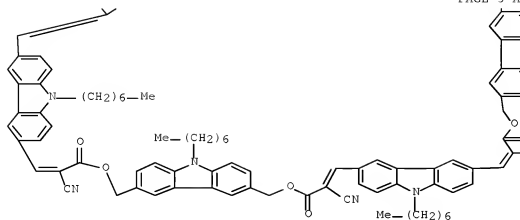
PAGE 1-A

PAGE 2-A



PAGE 2-B





OS.CITING REF COUNT: 20 THERE ARE 20 CAPLUS RECORDS THAT CITE THIS RECORD (20 CITINGS)

L4 ANSWER 33 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1991:643972 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 115:243972
 ORIGINAL REFERENCE NO.: 115:41361a, 41364a
 TITLE: Electrophotographic photoreceptor using tetrakisazo charge-generating agent
 INVENTOR(S): Yamada, Yasuyuki; Enomoto, Tsuyoshi; Ito, Naoto; Nishizawa, Isao; Yamaguchi, Teruhiro
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03073960	A	19910328	JP 1989-209545	19890815 <--

PRIORITY APPLN. INFO.:

JP 1989-209545

19890815

AB The photoreceptor comprises an elec. conductive support coated with a photosensitive layer containing ≥ 1 tetrakisazo compound I (R = coupler residue). A photoreceptor using a charge-generating layer containing I (R = Q) and with a charge-transporting layer containing a hydrazone compound showed good photosensitivity and durability in repeated use.

IT 136925-48-9 136960-88-8 137288-57-4

RL: TEM (Technical or engineered material use); USES (Uses)

(electrophotog. photoreceptor charge-generating agent)

IT 136925-50-3P

RL: PREP (Preparation)

(preparation of, as electrophotog. photoreceptor charge-generating agent)

IT 136925-48-9 136960-88-8 137288-57-4

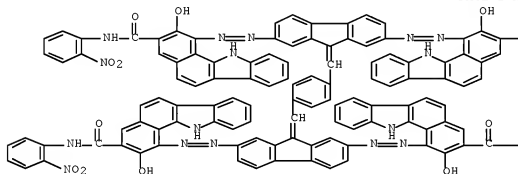
RL: TEM (Technical or engineered material use); USES (Uses)

(electrophotog. photoreceptor charge-generating agent)

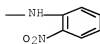
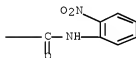
RN 136925-48-9 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide,
1,1',1'',1'''-[1,4-phenylenebis[methylidyne-9H-fluorene-2,7-diyl-9-ylidenebis(azo)]]tetrakis[2-hydroxy-N-(2-nitrophenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



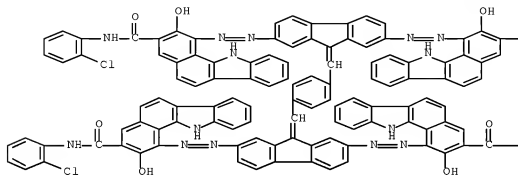
PAGE 1-B



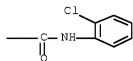
RN 136960-88-8 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide,
1,1',1'',1'''-[1,4-phenylenebis[methylydyne-9H-fluorene-2,7-diyl-9-ylidenebis(azo)]]tetrakis[N-(2-chlorophenyl)-2-hydroxy- (9CI) (CA INDEX NAME)

PAGE 1-A

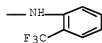
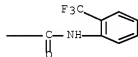
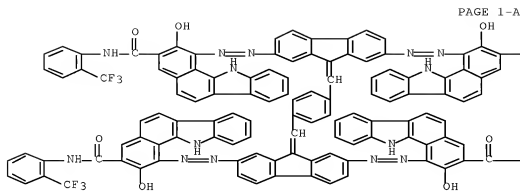


PAGE 1-B

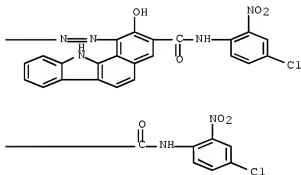
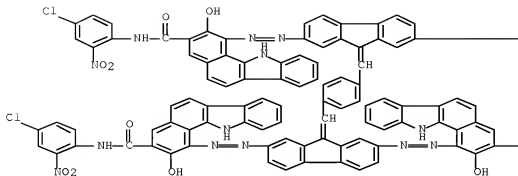


RN 137288-57-4 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide,
1,1',1'',1'''-[1,4-phenylenebis[methylydyne-9H-fluorene-9-ylidene-2,7-diylbis(azo)]]tetrakis[2-hydroxy-N-[2-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



IT 136925-50-3P
 RL: PREP (Preparation)
 (preparation of, as electrophotog. photoreceptor charge-generating agent)
 RN 136925-50-3 HCAPLUS
 CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[1,4-phenylenebis[methyldiyl-9H-fluorene-2,7-diyl-9-ylidenebis(azo)]]tetrakis[N-(4-chloro-2-nitrophenyl)-2-hydroxy- (9CI) (CA
 INDEX NAME)



L4 ANSWER 34 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1991:643937 HCAPLUS Full-text
 DOCUMENT NUMBER: 115:243937
 ORIGINAL REFERENCE NO.: 115:41356h,41357a
 TITLE: Electrophotographic photoreceptor
 INVENTOR(S): Makino, Naonori; Hoshi, Satoshi; Kitatani, Katsushi
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 33 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02304453	A	19901218	JP 1989-125382	19890518 <--
PRIORITY APPLN. INFO.:			JP 1989-125382	19890518

AB The title photoreceptor comprises either a layer containing charge transport substances and charge generating substances on an elec. conductive support or a layer containing charge transport substances and a layer containing charge

generating substances on an elec. conductive support. The title photoreceptor contains azo compds. with moiety Q1 (Ar2 = arylene, heteroarylene; Ar3 = aromatic hydrocarbon, aromatic heterocyclyl; X = atoms forming aromatic or heterocyclic moiety with ring fused to the benzene ring which has the OH substituent). The said azo compds. are charge-generating substances. Azo compound I (A = Q2) is a charge generating substance.

IT 137309-66-1

RL: USES (Uses)

(charge-generating substance, in electrophotog. photoreceptor)

IT 137309-66-1

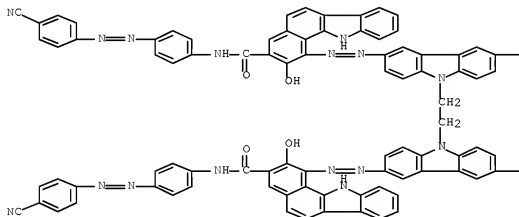
RL: USES (Uses)

(charge-generating substance, in electrophotog. photoreceptor)

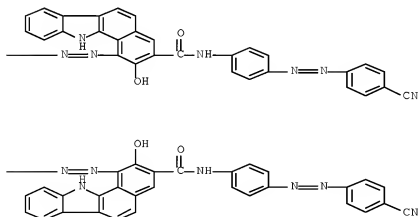
RN 137309-66-1 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide,
1,1',1'',1'''-[1,2-ethanediylbis[9H-carbazole-9,3,6-
triylbis(azo)]]tetrakis[2-hydroxy-N-[4-[(4-cyanophenyl)azo]phenyl]- (9CI)
(CA INDEX NAME)

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L4 ANSWER 35 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1991:523830 HCAPLUS Full-text
 DOCUMENT NUMBER: 115:123830
 ORIGINAL REFERENCE NO.: 115:21034h,21035a
 TITLE: Electrophotographic photoreceptor
 INVENTOR(S): Kitatani, Katsushi; Makino, Naonori; Hoshi, Satoshi
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02304573	A	19901218	JP 1989-126283	19890519 <--
PRIORITY APPLN. INFO.:			JP 1989-126283	19890519

OTHER SOURCE(S): MARPAT 115:123830

AB The title photoreceptor comprises either 1 layer containing charge-transporting and charge-generating substances on an elec. conductive support or sep. layers containing charge-transporting and charge-generating substances on an elec. conductive support. The charge-generating substances are azo compds. I (L = O, S, SO₂, etc.; A₁, A₂ = alkylene; Cp = coupler residue). The photoreceptor shows high sensitivity. Azo compound II (Z = Q) is an example of I.

IT 135856-19-8 135856-29-0 135856-30-3
 135856-32-5 135881-65-1 135881-66-2

RL: USES (Uses)

(electrophotog. photoreceptor containing)

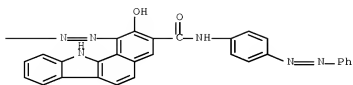
IT 135856-19-8 135856-29-0 135856-30-3
 135856-32-5 135881-65-1 135881-66-2

RL: USES (Uses)

(electrophotog. photoreceptor containing)

RN 135856-19-8 HCAPLUS

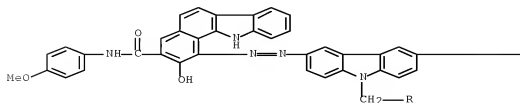
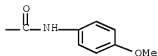
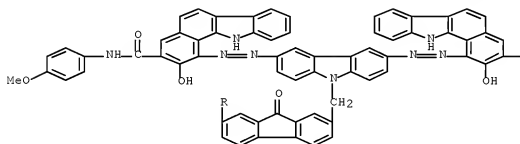
CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[oxybis[2,1-ethanediy1-9H-carbazole-9,3,6-
 triylbis(azo)]]tetrakis[2-hydroxy-N-[4-(phenylazo)phenyl]- (9CI) (CA
 INDEX NAME)

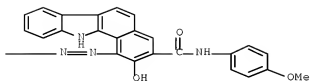


RN 135856-29-0 HCAPLUS

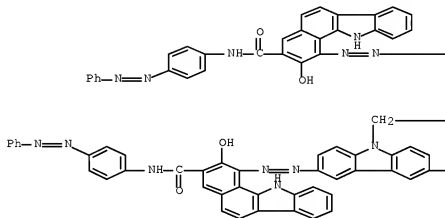
CN 11H-Benzo[a]carbazole-3-carboxamide,

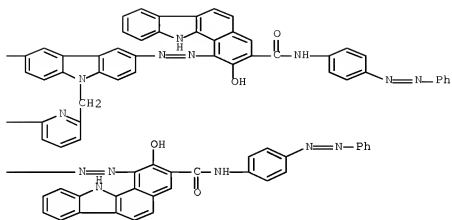
1,1',1'',1'''-[(9-oxo-9H-fluorene-2,7-diyl)bis(methylene-9H-carbazole-9,3,6-triylbis(azo))tetrakis[2-hydroxy-N-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)





RN 135856-30-3 HCAPLUS
 CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[2,6-pyridinediylbis[methylene-9H-carbazole-9,3,6-
 triylbis(azo)]]tetrakis[2-hydroxy-N-[4-(phenylazo)phenyl]- (9CI) (CA
 INDEX NAME)

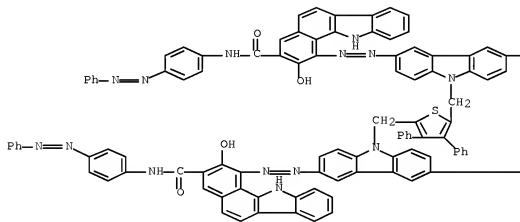


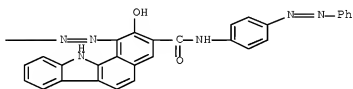
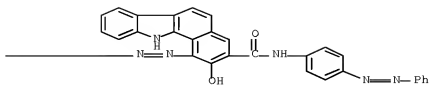


RN 135856-32-5 HCAPLUS

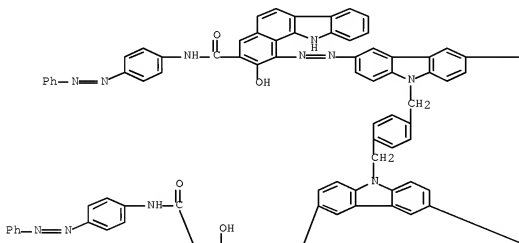
CN 11H-Benzo[a]carbazole-3-carboxamide,

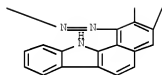
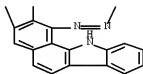
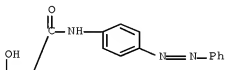
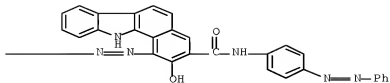
1,1',1'',1'''-[(3,4-diphenyl-2,5-thiophenediyl)bis[methylene-9H-carbazole-9,3,6-triylbis(azo)]]tetrakis[2-hydroxy-N-[4-(phenylazo)phenyl]- (9CI)
(CA INDEX NAME)



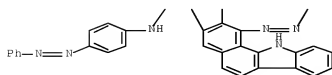
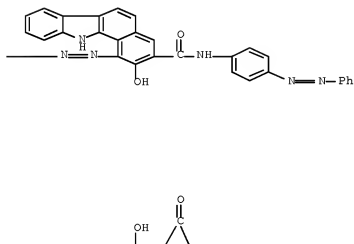
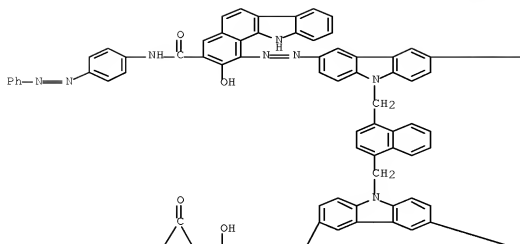


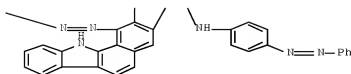
RN 135881-65-1 HCAPLUS
 CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[1,4-phenylenebis[methylene-9H-carbazole-9,3,6-
 triylbis(azo)]]tetrakis[2-hydroxy-N-[4-(phenylazo)phenyl]- (9CI) (CA
 INDEX NAME)





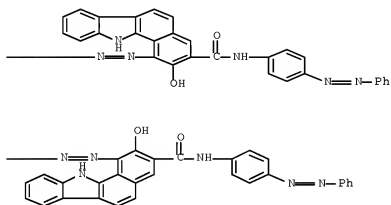
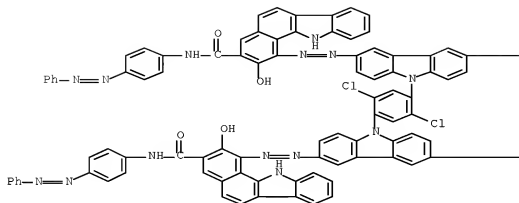
RN 135881-66-2 HCAPLUS
 CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[1,4-naphthalenediylbis[methylene-9H-carbazole-9,3,6-
 triylbis(azo)]]tetrakis[2-hydroxy-N-[4-(phenylazo)phenyl]- (9CI) (CA
 INDEX NAME)





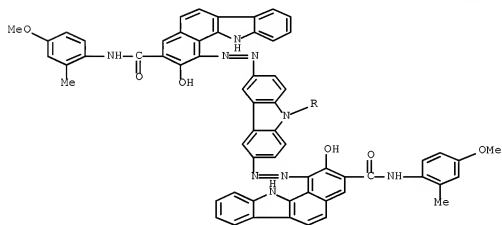
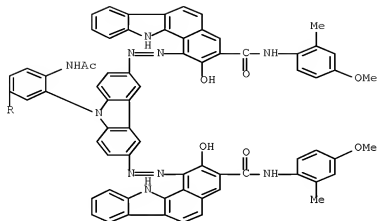
L4 ANSWER 36 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1991:523829 HCAPLUS Full-text
 DOCUMENT NUMBER: 115:123829
 ORIGINAL REFERENCE NO.: 115:21031a, 21034a
 TITLE: Electrophotographic photoreceptor
 INVENTOR(S): Kitatani, Katsushi; Makino, Naonori; Hoshi, Satoshi
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02304455	A	19901218	JP 1989-125384	19890518 <--
PRIORITY APPLN. INFO.:			JP 1989-125384	19890518
OTHER SOURCE(S): MARPAT 115:123829				
AB The photoreceptor comprises either 1 layer containing both charge-transporting and charge-generating substances on an elec. conductive support or sep. layers containing each of these substances on an elec. conductive support. The photoreceptor contains azo compds. I [L = arylene, polycyclic arylene (which has fused rings), heteroarylene; Cp = coupler residue] as charge-generating substances. The photoreceptor shows good durability. Azo compound II (Z = Q) is an example of I.				
IT 135856-38-1		135856-41-6	135856-42-7	
RL: USES (Uses)				
(electrophotog. photoreceptor containing)				
IT 135856-38-1		135856-41-6	135856-42-7	
RL: USES (Uses)				
(electrophotog. photoreceptor containing)				
RN 135856-38-1	HCAPLUS			
CN 11H-Benzo[a]carbazole-3-carboxamide,				
1,1',1'',1'''-[(2,5-dichloro-1,4-phenylene)bis[9H-carbazole-9,3,6-triylbis(azo)]]tetrakis[2-hydroxy-N-[4-(phenylazo)phenyl]- (9CI) (CA				
INDEX NAME)				

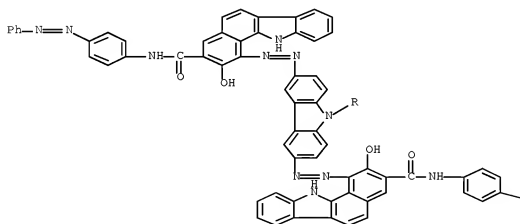
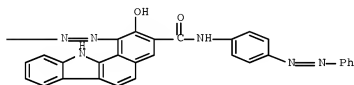
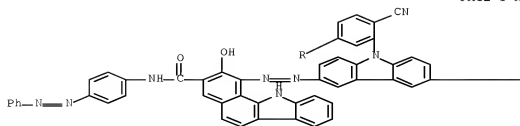


RN 135856-41-6 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[4-(acetylamino)-1,3-phenylene]bis[9H-carbazole-9,3,6-
 triylbis(azo)]tetrakis[2-hydroxy-N-(4-methoxy-2-methylphenyl)- (9CI) (CA
 INDEX NAME)



RN 135856-42-7 HCAPLUS
 CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[(4-cyano-1,3-phenylene)bis[9H-carbazole-9,3,6-
 triylbis(azo)]]tetrakis[2-hydroxy-N-[4-(phenylazo)phenyl]- (9CI) (CA
 INDEX NAME)



—N—N—Ph

L4 ANSWER 37 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1990:414802 HCAPLUS Full-text
 DOCUMENT NUMBER: 113:14802
 ORIGINAL REFERENCE NO.: 113:2471a,2474a
 TITLE: Octazonium salt compounds and tetrakisazo compounds
 and manufacture thereof
 INVENTOR(S): Yamada, Yasuyuki; Ito, Naoto; Nishizawa, Isao;
 Yamaguchi, Teruhiro
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01230573	A	19890914	JP 1988-277303	19881104 <--
JP 08026013	B	19960313		

PRIORITY APPLN. INFO.: JP 1987-290700 A1 19871119

AB The title salts have the general formula Q(-p-C₆H₄N₂+ X-)4 (Q = thiophene-1,1-dioxide-2,3,4,5-tetrayl; X- = anion) which are coupled with I [at o-position with respect to OH, Z = (un)substituted carbo- or heterocycle member; Y = -CONR₁R₂, CONHN:CR₃R₄; R₁ = (un)substituted carbo- or heterocycle group; R₂ = H, (un)substituted alkyl, phenyl; R₃ = (un)substituted carbocycle group; R₄ = H, alkyl, (un)substituted phenyl; R₃R₄ = ring member] to give the title tetrakisazo compds. Q(-p-C₆H₇N:NA)4 useful as charge generators in electrophotog. photoconductors.

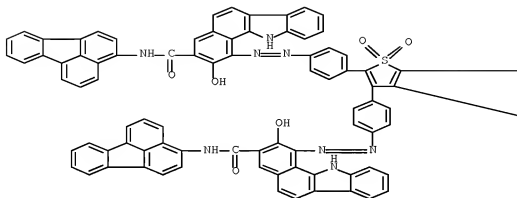
IT 127637-37-0P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture and use of, as charge generator in electrophotog. photoconductors)

IT 127637-37-0P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture and use of, as charge generator in electrophotog. photoconductors)

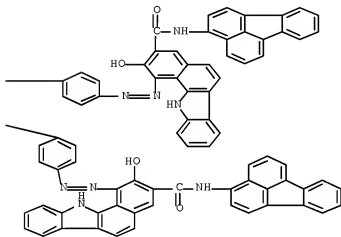
RN 127637-37-0 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[(1,1-dioxido-2,3,4,5-thiophenetetrayl) tetrakis (4,1-

PAGE 1-A



PAGE 1-B

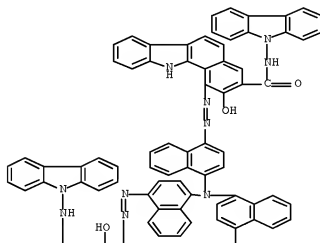


L4 ANSWER 38 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1990:45619 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 112:45619
ORIGINAL REFERENCE NO.: 112:7695a,7698a
TITLE: Electrophotographic photoreceptor
INVENTOR(S): Anayama, Hideki; Miyazaki, Hajime
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

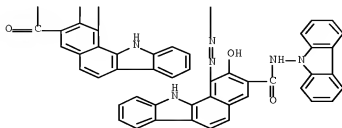
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 01076062	A	19890322	JP 1987-232096	19870918 <--
PRIORITY APPLN. INFO.:				JP 1987-232096	19870918
AB	In the title photoreceptor, a photoconductive layer contains I (A = phenolic coupler). I is used as a charge generator. The photoreceptor shows improved sensitivity and stable chargeability. I (A = Q) was used as an example of I as a charge generator.				
IT	124424-93-7		124424-95-9		
	RL: USES (Uses)				
	(electrophotog. photoreceptor material)				
IT	124424-93-7		124424-95-9		
	RL: USES (Uses)				
	(electrophotog. photoreceptor material)				
RN	124424-93-7	HCAPLUS			
CN	11H-Benzo[a]carbazole-3-carboxamide, 1,1',1''-[nitritotris(4,1-naphthalenediylazo)]tris[N-9H-carbazol-9-yl-2-hydroxy- (9CI) (CA INDEX NAME)				

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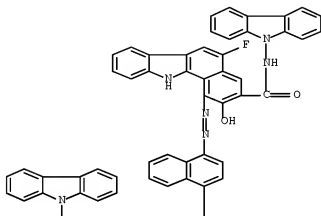


PAGE 2-A

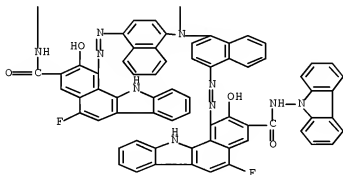


RN 124424-95-9 HCAPLUS
 CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1''-[nitritotris(4,1-naphthalenediylazo)]tris[N-9H-carbazol-9-yl-5-
 fluoro-2-hydroxy- (9CI) (CA INDEX NAME)

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PAGE 2-A



L4 ANSWER 39 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1987:608779 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 107:208779
 ORIGINAL REFERENCE NO.: 107:33359a,33362a
 TITLE: Electrophotographic charge-generating tetrakisazo
 photoconductors
 INVENTOR(S): Matsumoto, Masakazu; Takiguchi, Takao; Umehara,
 Masashige; Yamashita, Masataka; Ishikawa, Shozo
 PATENT ASSIGNEE(S): Canon K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 42 pp.

DOCUMENT TYPE: CODEN: JKXXAF
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: 6 Japanese
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62019876	A	19870128	JP 1985-159403	19850718 <--
JP 04035751	B	19920612		
US 4666810	A	19870519	US 1986-852243	19860415 <--
PRIORITY APPLN. INFO.:			JP 1985-80248	A 19850417
			JP 1985-157699	A 19850717
			JP 1985-157700	A 19850717
			JP 1985-159401	A 19850718
			JP 1985-159402	A 19850718
			JP 1985-159403	A 19850718

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The tetrakisazo photoconductor has the formula
 (AN:NZ2)(AN:NZ3)NZ1N(Z4N:NA)(Z5N:NA) (I; A = coupler residue with a phenolic OH group; Z1 = heterocyclylene; Z2-Z5 = arylenes, condensed polycyclylene, heterocyclylene). An electrophotog. charge-generating layer may contain a tetrakisazo pigment of the formula I (A = coupler residue from 3-hydroxy-2-naphthoic acid anilide; Z1 = II; Z2-Z5 = 1, 4-phenylene) and a poly(vinyl butyral) binder. It provides electrophotog. photoreceptors with improved sensitivity and voltage stability for repeated use.

IT 110696-85-0

RL: USES (Uses)

(electrophotog. charge-generating photoconductor, for improved sensitivity and voltage stability)

IT 110696-85-0

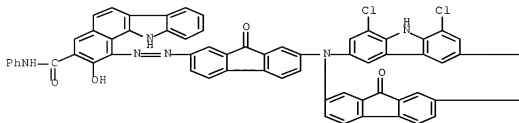
RL: USES (Uses)

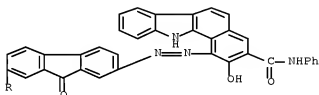
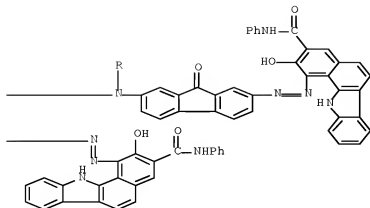
(electrophotog. charge-generating photoconductor, for improved sensitivity and voltage stability)

RN 110696-85-0 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[(1,8-dichloro-9H-carbazole-3,6-diyl)bis[nitrilobis[(9-oxo-9H-fluorene-7,2-diyl)azo]]]tetrakis[2-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)

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L4 ANSWER 40 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1987:587311 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 107:187311

ORIGINAL REFERENCE NO.: 107:29883a,29886a

TITLE: Electrophotographic charge carrier-generating pentakisazo pigments

INVENTOR(S): Matsumoto, Masakazu; Umehara, Masashige; Takiguchi, Takao; Yamashita, Masataka; Ishikawa, Shozo

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 42 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62019874	A	19870128	JP 1985-159401	19850718 <--
JP 04035752	B	19920612		
US 4666810	A	19870519	US 1986-852243	19860415 <--
PRIORITY APPLN. INFO.:			JP 1985-80248	A 19850417
			JP 1985-157699	A 19850717
			JP 1985-157700	A 19850717

JP 1985-159401 A 19850718
 JP 1985-159402 A 19850718
 JP 1985-159403 A 19850718

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The pentakisazo charge carrier-generating pigments have the formula (AN:NZ3) (AN:NZ4)NZ1N:NZ2N(Z5N:NA) (Z6N:NA) (I; A = coupler residue with a phenolic OH group; Z1-Z6 = arylene, condensed polycyclene, heterocyclene). Thus, an electrophotog. charge-generating layer may contain a pentakisazo pigment of the formula I (A = coupler residue from 3-hydroxy-2-naphthoic acid anilide; Z1-Z6 = 1,4-phenylene) and a poly(vinyl butyral) binder. It provides an electrophotog. photoreceptor with improved sensitivity and voltage stability for repeated use.

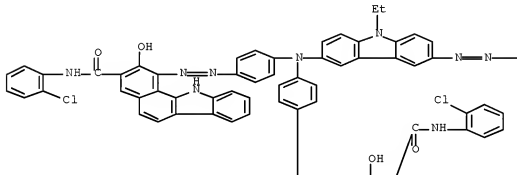
IT 110573-22-3 110573-25-6
 RL: USES (Uses)
 (electrophotog. charge-generating pigment)

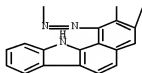
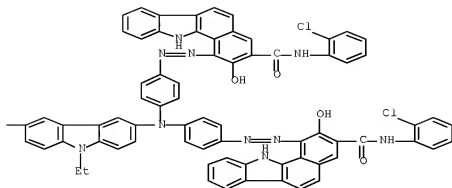
IT 110573-22-3 110573-25-6
 RL: USES (Uses)
 (electrophotog. charge-generating pigment)

RN 110573-22-3 HCAPLUS

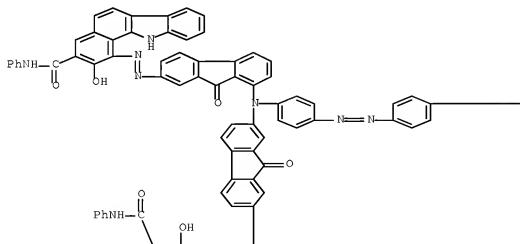
CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[azobis[(9-ethyl-9H-carbazole-6,3-diyl)nitri]bis(4,1-phenyleneazo)]]tetrakis[N-(2-chlorophenyl)-2-hydroxy- (9CI) (CA INDEX NAME)

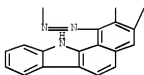
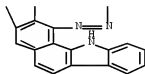
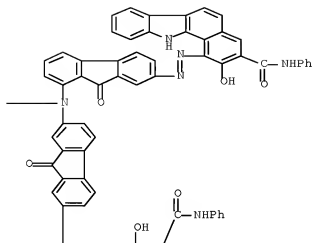
PAGE 1-A





RN 110573-25-6 HCAPLUS
 CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[azobis[4,1-phenylenenitrilobis[(9-oxo-9H-fluorene-7,2-
 diyl)azo]]]tetrakis[3-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)





OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L4 ANSWER 41 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1987:565424 HCAPLUS Full-text

DOCUMENT NUMBER: 107:165424

ORIGINAL REFERENCE NO.: 107:26425a, 26428a

TITLE: Electrophotographic charge-generating tetrakisazo photoconductors

INVENTOR(S): Matsumoto, Masakazu; Umehara, Masashige; Takiguchi, Takao; Yamashita, Masataka; Ishikawa, Shozo

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 38 pp.

DOCUMENT TYPE: CODEN: JKXXAF
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: 6 Japanese
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62019875	A	19870128	JP 1985-159402	19850718 <--
JP 04048388	B	19920806		
US 4666810	A	19870519	US 1986-852243	19860415 <--
PRIORITY APPLN. INFO.:			JP 1985-80248	A 19850417
			JP 1985-157699	A 19850717
			JP 1985-157700	A 19850717
			JP 1985-159401	A 19850718
			JP 1985-159402	A 19850718
			JP 1985-159403	A 19850718

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

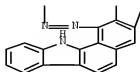
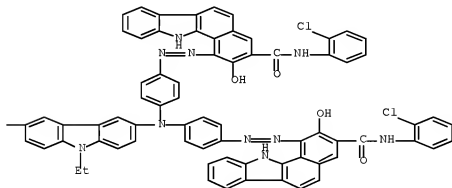
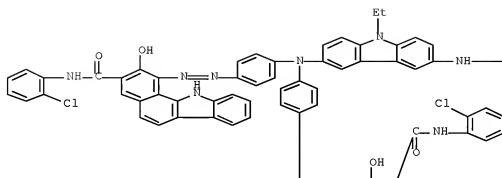
AB The tetrakisazo photoconductor has the formula
 (AN:NZ3)(AN:NZ4)NZ1XZ2N(Z5N:NA)(Z6N:NA) (I; A = coupler residue with a phenolic OH group; Z1-Z6 = arylene, condensed polycyclylene, heterocyclylene; X = NR, O, S, SO2, CO; R = H, alkyl, aryl, etc.). An electrophotog. charge-generating layer may contain a tetrakisazo compound of the formula I (A = coupler residue from 3-hydroxy-2-naphthoic acid anilide; Z1-Z6 = 1,4-phenylene; X = NH) and a poly(vinyl butyral) binder. It provides electrophotog. photoreceptors with improved sensitivity and voltage stability for repeated use.

IT 110743-13-0 110743-14-1
 RL: USES (Uses)
 (electrophotog. charge-generating photoconductor, with improved sensitivity and voltage stability for repeated use)

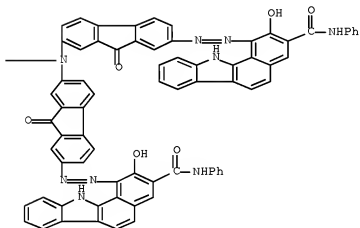
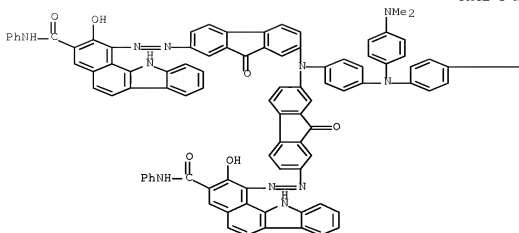
IT 110743-13-0 110743-14-1
 RL: USES (Uses)
 (electrophotog. charge-generating photoconductor, with improved sensitivity and voltage stability for repeated use)

RN 110743-13-0 HCAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[iminobis[(9-ethyl-9H-carbazole-6,3-diyl)nitrilobis(4,1-phenyleneazo)]]tetrakis[N-(2-chlorophenyl)-2-hydroxy- (9CI) (CA INDEX NAME)



RN 110743-14-1 HCAPLUS
 CN 11H-Bezo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[[[4-(dimethylamino)phenyl]imino]bis[4,1-
 phenylenenitrilobis[(9-oxo-9H-fluorene-7,2-diyl)azo]]]tetrakis[2-hydroxy-N-
 phenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 42 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1987:565421 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 107:165421

ORIGINAL REFERENCE NO.: 107:26425a

TITLE: Electrophotographic charge-generating tetrakisazo pigments

INVENTOR(S): Matsumoto, Masakazu; Takiguchi, Takao; Umehara, Masashige; Yamashita, Masataka; Ishikawa, Shozo

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 38 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 6
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62018566	A	1987/0127	JP 1985-157700	19850717 <--
US 4666810	A	1987/0519	US 1986-852243	19860415 <--
PRIORITY APPLN. INFO.:			JP 1985-80248	A 19850417
			JP 1985-157699	A 19850717
			JP 1985-157700	A 19850717
			JP 1985-159401	A 19850718
			JP 1985-159402	A 19850718
			JP 1985-159403	A 19850718

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The charge-generating tetrakisazo pigments have the formula
(AN;NZ2) (AN;NZ3)NZ1N(Z4N;NA) (Z5N;NA) (1; A = coupler residue with a phenolic OH
group; Z1 = arylene, condensed polycyclene; Z2-Z5 = arylene, condensed
polycyclene, heterocyclene). An electrophotog. charge-generating layer may
contain a tetrakisazo pigment of the formula I (A = coupler residue from 3-
hydroxy-2-naphthoic acid anilide; Z1 = 3,3'-dichloro-4,4'-biphenylene; Z2-Z5 =
1,4-phenylene) and a poly(vinyl butyral) binder. It provides electrophotog.
photoreceptors with improved sensitivity and voltage stability for repeated
use.

IT 110557-80-7 110557-81-8 110557-88-5

RL: USES (Uses)

(electrophotog. charge-generating pigments)

IT 110557-80-7 110557-81-8 110557-88-5

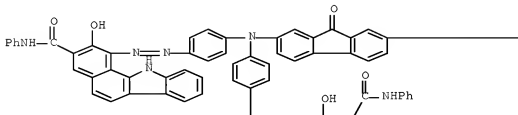
RL: USES (Uses)

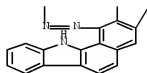
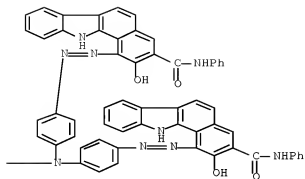
(electrophotog. charge-generating pigments)

RN 110557-80-7 HCAPLUS

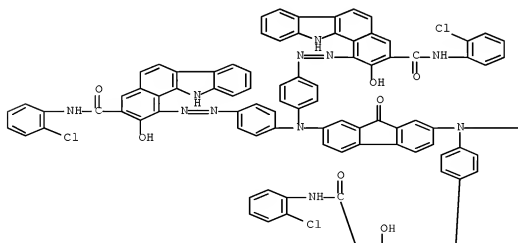
CN 11H-Benzo[a]carbazole-3-carboxamide,
1,1',1'',1'''-[(9-oxo-9H-fluorene-2,7-diyl)bis[nitrilobis(4,1-
phenyleneazo)]]tetrakis[2-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)

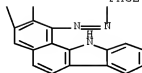
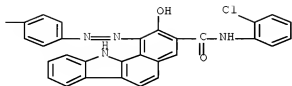
PAGE 1-A





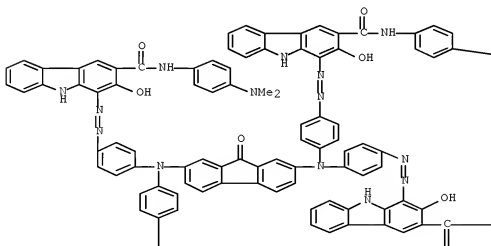
RN 110557-81-8 HCAPLUS
 CN 11H-Benzo[a]carbazole-3-carboxamide,
 1,1',1'',1'''-[(9-oxo-9H-fluorene-2,7-diyl)bis[nitrilobis(4,1-
 phenyleneazo)]]tetrakis[N-(2-chlorophenyl)-2-hydroxy- (9Cl) (CA INDEX
 NAME)



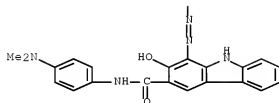
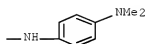


RN 110557-88-5 HCAPLUS

CN 9H-Carbazole-3-carboxamide, 1,1',1'',1'''-[(9-oxo-9H-fluorene-2,7-diyl)bis[nitrilobis(4,1-phenyleneazo)]]tetrakis[N-(4-(dimethylamino)phenyl)-2-hydroxy- (9CI) (CA INDEX NAME)]



—NMe₂



L4 ANSWER 43 OF 45 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1987:565420 HCAPLUS Full-text

DOCUMENT NUMBER: 107:165420

ORIGINAL REFERENCE NO.: 107:26424h,26425a

TITLE: Electrophotographic charge-generating tetrakisazo pigments

INVENTOR(S): Matsumoto, Masakazu; Umehara, Masashige; Takiguchi, Takao; Yamashita, Masataka; Ishikawa, Shozo

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 40 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62018565	A	19870127	JP 1985-157699	19850717 <--
JP 04035750	B	19920612		
US 4666810	A	19870519	US 1986-852243	19860415 <--
PRIORITY APPLN. INFO.:			JP 1985-80248	A 19850417

JP 1985-157699	A	19850717
JP 1985-157700	A	19850717
JP 1985-159401	A	19850718
JP 1985-159402	A	19850718
JP 1985-159403	A	19850718

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The charge-generating tetrakisazo pigments have the formula (AN:NZ3) (AN:NZ4)NZ1CB1:CB2Z2N(Z5N:NA) (Z6N:NA) (I; A = coupler residue with a phenolic OH group; Z1-Z6 = arylene, condensed polycyclene, heterocyclene; B1, B2 = H, halo, CF3, CN, etc.). An electrophotog. charge-generating layer may contain a tetrakisazo pigment of the formula I (A = coupler residue from 3-hydroxy-2-naphthoic acid anilide; Z1-Z6 = 1,4-phenylene; B1, B2 = H) and a poly(vinyl butyral) binder. It provides electrophotog. photoreceptors with improved sensitivity and voltage stability for repeated use.

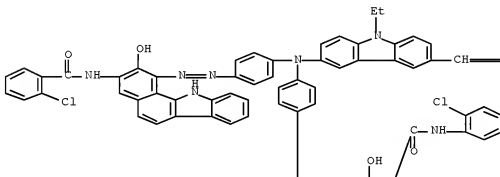
IT 110573-68-7 110573-72-3
RL: USES (Uses)
(electrophotog. charge-generating pigments)

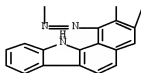
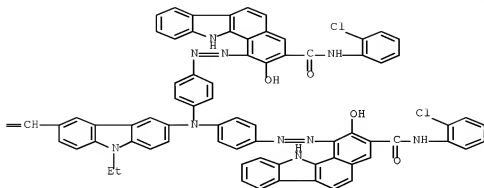
IT 110573-68-7 110573-72-3
RL: USES (Uses)
(electrophotog. charge-generating pigments)

RN 110573-68-7 HCAPLUS

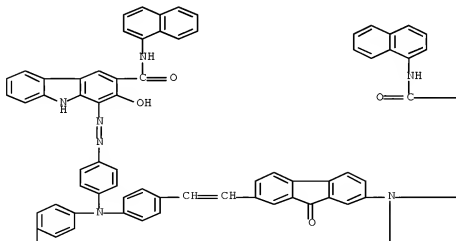
CN 11H-Benzo[a]carbazole-3-carboxamide,
1,1',1'',1'''-[1,2-ethenediylbis[(9-ethyl-9H-carbazole-6,3-diyl)nitrilobis(4,1-phenyleneazo)]]tetrakis[N-(2-chlorophenyl)-2-hydroxy-(9CI) (CA INDEX NAME)

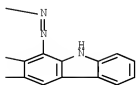
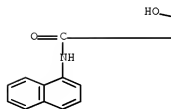
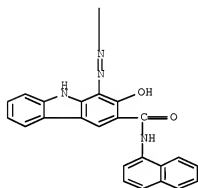
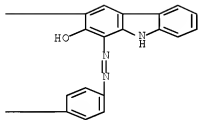
PAGE 1-A





RN 110573-72-3 HCAPLUS
 CN 9H-Carbazole-3-carboxamide, 1,1'-[[[4-[2-[7-[bis[4-[[2-hydroxy-3-[(1-naphthalenylamino)carbonyl]-9H-carbazol-1-yl]azo]phenyl]amino]-9-oxo-9H-fluoren-2-yl]ethenyl]phenyl]imino]bis(4,1-phenyleneazo)]bis[2-hydroxy-N-1-naphthalenyl- (9CI) (CA INDEX NAME)





ACCESSION NUMBER: 1987:147075 HCAPLUS Full-text
 DOCUMENT NUMBER: 106:147075
 ORIGINAL REFERENCE NO.: 106:23843a,23846a
 TITLE: Sensitive materials in electrophotography
 INVENTOR(S): Miyazaki, Hajime; Takiguchi, Takao; Matsumoto, Masakazu
 PATENT ASSIGNEE(S): Canon K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61194447	A	19860828	JP 1985-35864	19850225 <--
PRIORITY APPLN. INFO.:			JP 1985-35864	19850225

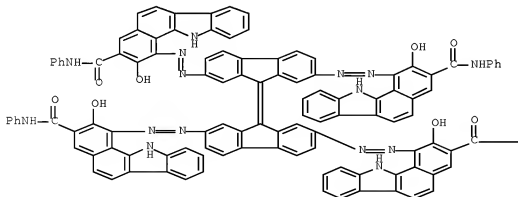
AB An electrophotog. photosensitive layer (on a conductive substrate) contains I (k, p, m, n = 0, 1; and k, p, m, and n are not 0 at the same time; R = univalent group forming an azo bond by reaction with a diazonium salt) as a photoconductive substance. Thus, a photosensitive material was prepared by using a charge-generating layer containing I (k, p, m, n = 1; R = II) and a charge-transport layer containing III. The material was applied to electrophotog., showing high sensitivity and durability for 3000 use cycles.

IT 107550-50-5
 RL: USES (Uses)
 (electrophotog. photoconductor with charge-transport layer containing hydrazone and charge-generating layer containing)

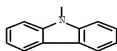
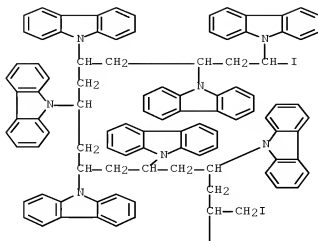
IT 107550-50-5
 RL: USES (Uses)
 (electrophotog. photoconductor with charge-transport layer containing hydrazone and charge-generating layer containing)

RN 107550-50-5 HCAPLUS
 CN 11H-*Benzo[a]carbazole-3-carboxamide*, 1,1'-[[9-[2,7-bis[[2-hydroxy-3-[(phenylamino)carbonyl]-11H-benzo[a]carbazol-1-yl]azo]-9H-fluoren-9-ylidene]-9H-fluorene-2,7-diyl]bis(azo)]bis[2-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)

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CN Carbazole, 9,9',9'',9''',9''''',9''''',9''''',9''''''- [1-iodo-15-
(iodomethyl)-1,3,5,7,9,11,13,15-pentadecaneoctayl]octa- (8CI) (CA
NAME)



=> file stnguide

=> log h

FILE 'HOME' ENTERED AT 17:56:20 ON 20 NOV 2010

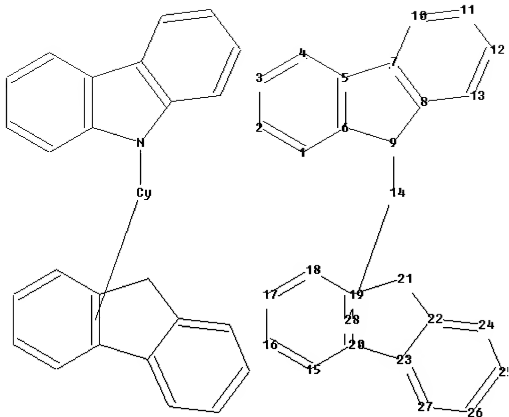
=> file reg

FILE 'REGISTRY' ENTERED AT 17:56:27 ON 20 NOV 2010

=>

Uploading C:\Program

Files\Stnexp\Queries\10594273_carbazole_cy_fluorene_20101120.str



```

chain nodes :
14
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 15 16 17 18 19 20 21 22 23 24
25 26 27
chain bonds :
9-14
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 7-10 8-9 8-13 10-11 11-12 12-13
15-16 15-20 16-17 17-18 18-19 19-20 19-21 20-23 21-22 22-23 22-24 23-27
24-25 25-26
26-27
exact/norm bonds :
5-7 6-9 8-9 9-14
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-10 8-13 10-11 11-12 12-13 15-16 15-20
16-17 17-18 18-19 19-20 19-21 20-23 21-22 22-23 22-24 23-27 24-25 25-26
26-27

```

```

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom

```

```

=> d l1
L1 HAS NO ANSWERS
L1          STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY -  AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.


=> s l1 sss sam
SAMPLE SEARCH INITIATED 17:56:47
SAMPLE SCREEN SEARCH COMPLETED -      4485 TO ITERATE

100.0% PROCESSED      4485 ITERATIONS                      0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:   85684 TO   93716
PROJECTED ANSWERS:      0 TO      0

L2          0 SEA SSS SAM L1

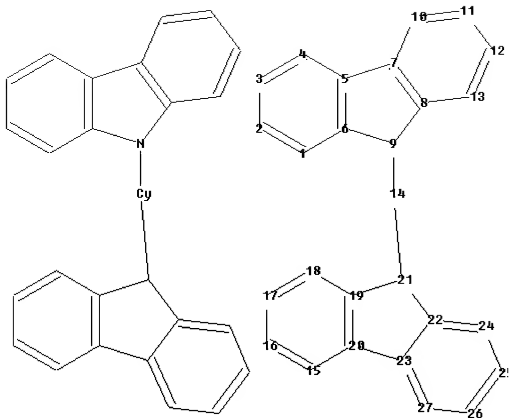
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FULL SEARCH INITIATED 17:57:09
FULL SCREEN SEARCH COMPLETED -      89137 TO ITERATE

100.0% PROCESSED      89137 ITERATIONS                      0 ANSWERS
SEARCH TIME: 00.00.01

L3          0 SEA SSS FUL L1

=>
Uploading C:\Program
Files\Stnexp\Queries\10594273_carbazole_cy_fluorene_20101120A.str

```



```

chain nodes :
14
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 15 16 17 18 19 20 21 22 23 24
25 26 27
chain bonds :
9-14 14-21
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 7-10 8-9 8-13 10-11 11-12 12-13
15-16 15-20 16-17 17-18 18-19 19-20 19-21 20-23 21-22 22-23 22-24 23-27
24-25 25-26
26-27
exact/norm bonds :
5-7 6-9 8-9 9-14 14-21 19-21 20-23 21-22
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-10 8-13 10-11 11-12 12-13 15-16 15-20
16-17 17-18 18-19 19-20 22-23 22-24 23-27 24-25 25-26 26-27

```

```

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom

```

=> d l4
L4 HAS NO ANSWERS
L4 STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.

=> s l4 sss sam
SAMPLE SEARCH INITIATED 17:58:56
SAMPLE SCREEN SEARCH COMPLETED - 8473 TO ITERATE

100.0% PROCESSED 8473 ITERATIONS 2 ANSWERS
SEARCH TIME: 00.00.01

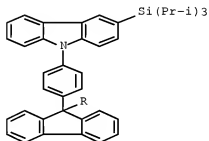
FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 163941 TO 174979
PROJECTED ANSWERS: 2 TO 124

L5 2 SEA SSS SAM L4

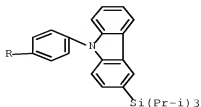
=> d scan

L5 2 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
IN 9H-Carbazole, 9,9'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[3-[tris(1-methylethyl)silyl]-
MF C67 H72 N2 Si2

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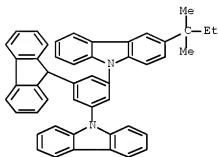
PAGE 2-A



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):2

L5 2 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
IN 9H-Carbazole, 9-[3-(9H-carbazol-9-yl)-5-(9H-fluoren-9-yl)phenyl]-3-(1,1-dimethylpropyl)-
MF C48 H38 N2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

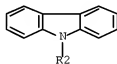
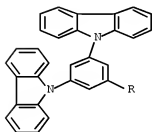
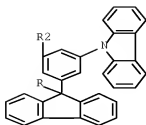
=> s 14 sss ful
FULL SEARCH INITIATED 17:59:45
FULL SCREEN SEARCH COMPLETED - 168724 TO ITERATE

100.0% PROCESSED 168724 ITERATIONS 23 ANSWERS
SEARCH TIME: 00.00.01

L6 23 SEA SSS FUL L4

=> d scan

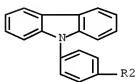
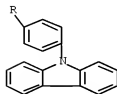
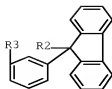
L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
IN 9H-Carbazole, 9,9',9'',9'''-(9H-fluoren-9-ylidenedi-5,1,3-benzenetriyl)tetrakis-
MF C73 H46 N4



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

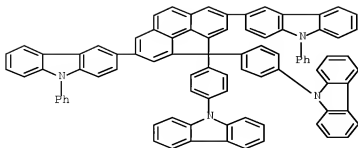
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):22

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN INDEX NAME NOT YET ASSIGNED
 MF C68 H44 N2



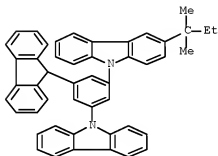
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 3,3'-[4,4-bis[4-(9H-carbazol-9-yl)phenyl]-4H-
 cyclopenta[def]phenanthrene-2,6-diyl]bis[9-phenyl-
 MF C87 H54 N4



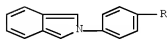
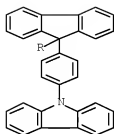
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9-[3-(9H-carbazol-9-yl)-5-(9H-fluoren-9-yl)phenyl]-3-(1,1-dimethylpropyl)-
 MF C48 H38 N2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

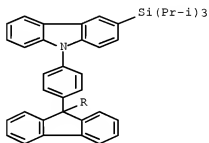
L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9-[4-[9-[4-(2H-isoindol-2-yl)phenyl]-9H-fluoren-9-yl]phenyl]-
 MF C45 H30 N2



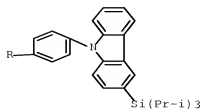
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9'-(9H-fluorene-9-ylidenedi-4,1-phenylene)bis[3-[tris(1-methylethyl)silyl]-
 MF C67 H72 N2 Si2

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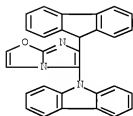


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PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

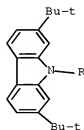
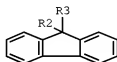
L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9-[6-(9H-fluoren-9-yl)imidazo[2,1-b]oxazol-5-yl]-
 MF C30 H19 N3 O

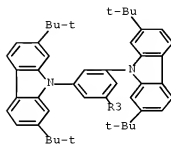
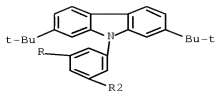


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9',9'',9'''-(9H-fluoren-9-ylidenedi-5,1,3-benzenetriyl)tetrakis(2,7-bis(1,1-dimethylethyl)-
 MF C105 H110 N4

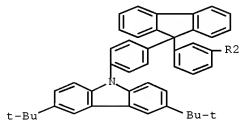
PAGE 1-A

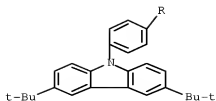




PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on SIN
 IN INDEX NAME NOT YET ASSIGNED
 MF C84 H76 N2





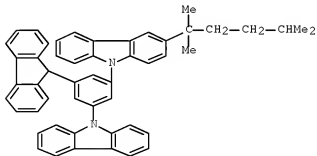
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9',9'',9''',9''''-[(8-methyl[5,6]fullerene-C60-Ih-
 1,7,11,24,27(8H)-pentayl)penta-4,1-phenylene]pentakis-
 MF C151 H63 N5

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

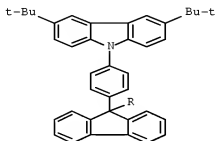
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9-[3-(9H-carbazol-9-yl)-5-(9H-fluoren-9-yl)phenyl]-3-(1,1,4-
 trimethylpentyl)-
 MF C51 H44 N2

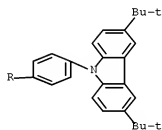


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[3,6-bis(1,1-
 dimethylethyl)-
 MF C65 H64 N2



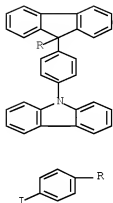
PAGE 1-A



PAGE 2-A

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

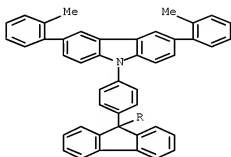
L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9-[4-[9-(4-iodophenyl)-9H-fluoren-9-yl]phenyl]-
 MF C37 H24 I N



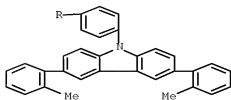
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[3,6-bis(2-
 methylphenyl)- (9CI)
 MF C77 H56 N2

PAGE 1-A



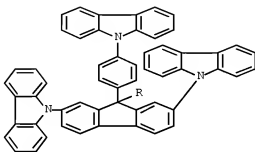
PAGE 2-A



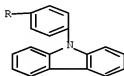
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
IN 9H-Carbazole, 9,9'-[9,9-bis[4-(9H-carbazol-9-yl)phenyl]-9H-fluorene-2,7-
diyl]bis-
MF C73 H46 N4

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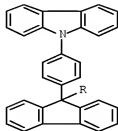
PAGE 2-A

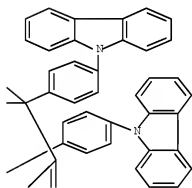
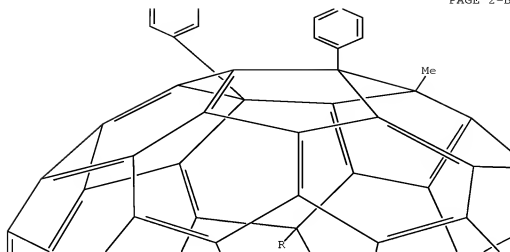


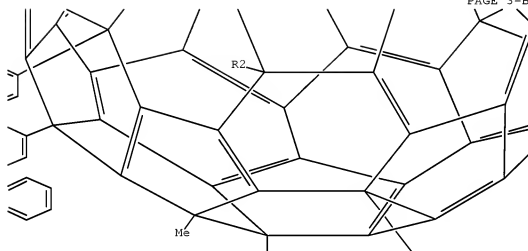
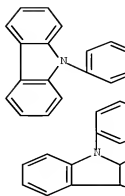
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
IN 9H-Carbazole, 9,9'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis-
MF C49 H32 N2

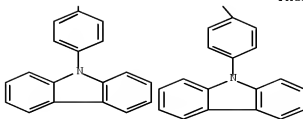
PAGE 1-A



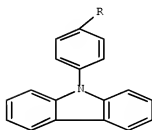




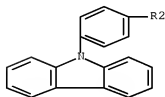
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PAGE 5-A

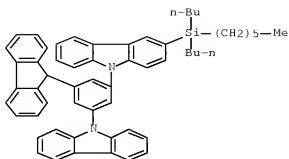


PAGE 6-A



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

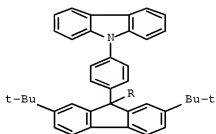
L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9-[3-(9H-carbazol-9-yl)-5-(9H-fluoren-9-yl)phenyl]-3-
 (dibutylhexylsilyl)-
 MF C57 H58 N2 Si



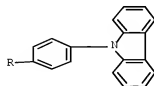
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9'-[[2,7-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene]di-
 4,1-phenylene]bis-
 MF C57 H48 N2

PAGE 1-A

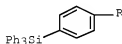
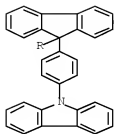


PAGE 2-A



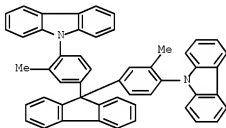
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9-[4-[9-[4-(triphenylsilyl)phenyl]-9H-fluoren-9-yl]phenyl]-
 MF C55 H39 N Si



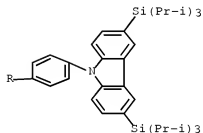
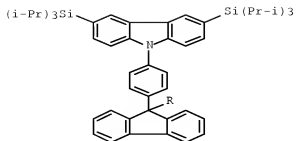
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9'-(9H-fluoren-9-ylidenebis(2-methyl-4,1-phenylene))bis-
 (9CI)
 MF C51 H36 N2



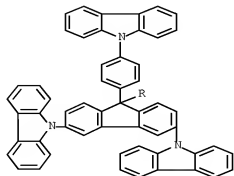
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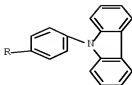
L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[3,6-
 bis[tris(1-methylethyl)silyl]-
 MF C85 H112 N2 Si4



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 23 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN 9H-Carbazole, 9,9'-[9,9-bis[4-(9H-carbazol-9-yl)phenyl]-9H-fluorene-3,6-
 diyl]bis- (9CI)
 MF C73 H46 N4





PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

=> file hcaplus uspatfull

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FILE 'USPATFULL' ENTERED AT 18:01:15 ON 20 NOV 2010

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29 L6

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(AD<20040326)

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(AD<20040326)

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(PD<20040326)

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TOTAL FOR ALL FILES

L9 4 L6 AND (AD<20040326 OR PD<20040326)

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L9 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:731630 HCAPLUS Full-text

DOCUMENT NUMBER: 143:182935

TITLE: Biscarbazolyl compounds, charge transporting and organic electroluminescent materials containing them, and organic electroluminescent devices

INVENTOR(S): Iida, Koichiro; Yabe, Masayoshi; Sato, Hideki

PATENT ASSIGNEE(S): Mitsubishi Chemical Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 48 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005213188	A	20050811	JP 2004-21188	20040129 <--
PRIORITY APPLN. INFO.:			JP 2004-21188	20040129

OTHER SOURCE(S): MARPAT 143:182935

AB The compds. are I (Ar1-Ar4 = aromatic hydrocarbyl, aromatic heterocyclyl; Z1, Z2 = direct bond, linkage capable of conjugating with carbazolyl group; Q = linkage nonconjugated with carbazolyl group; Ar1-Ar4 = substituent; n1-n4 = 0-3). Thus, I (Ar1 = Ar2 = Ar3 = Ar4 = o-tolyl, Z1 = Z3 = 1,4-phenylene, Q = 9,9'-fluorenylene) was manufactured and its cyclic voltammetry was measured.

IT 861220-55-5P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (biscarbazolyl compds. for charge transporting and organic electroluminescent materials for organic electroluminescent devices)

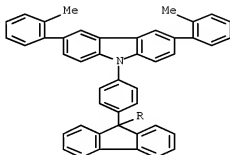
IT 861220-55-5P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (biscarbazolyl compds. for charge transporting and organic electroluminescent materials for organic electroluminescent devices)

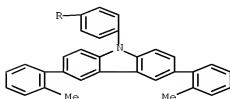
RN 861220-55-5 HCAPLUS

CN 9H-Carbazole, 9,9'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[3,6-bis(2-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L9 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:344276 HCAPLUS Full-text
DOCUMENT NUMBER: 142:400286
TITLE: Carbazole derivatives used as host material of
phosphorescent substance in organic electroluminescent
devices
INVENTOR(S): Chiu, Yung; Chiao, Chuan; Wang, Chien-Hua; Wang,
Li-Tuo; Tuan, Lien; Lei, Kang-Tieh
PATENT ASSIGNEE(S): Ching-Hua University, Peop. Rep. China; Beijing
Wei-Xin-nuo Science and Technology Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 37 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2005104971	A	20050421	JP 2004-258365	20040906
CN 1490312	A	20040421	CN 2003-156364	20030905 <--
CN 100335462	C	20070905		
US 20050127826	A1	20050616	US 2004-933867	20040903
US 7227027	B2	20070605		

PRIORITY APPLN. INFO.: CN 2003-156364 A 20030905

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 142:400286

AB Disclosed is a carbazole derivative, suited for use as a host material of a
phosphorescent substance in an organic electroluminescent device,
characterized in that the glass transition temperature and the lowest excited
triplet state energy are 70-220 °C and ≥ 2.62 eV, resp., and represented by I
[Y = linking group containing alkylene, arylene, and spiro structure; and R1-
16 = H, alkyl, alkoxy, etc.].

IT 648679-72-1P

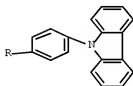
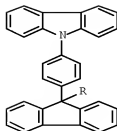
RL: DEV (Device component use); SPN (Synthetic preparation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(carbazole derivs. used as host material of phosphorescent substance in
organic electroluminescent devices)

IT 948679-72-1P

RL: DEV (Device component use); SPN (Synthetic preparation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(carbazole derivs. used as host material of phosphorescent substance in
organic electroluminescent devices)

RN 848679-72-1 HCAPLUS

CN 9H-Carbazole, 9,9'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis- (CA INDEX
NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)

L9 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2010 ACS ON STN

ACCESSION NUMBER: 2005:303240 HCAPLUS Full-text

DOCUMENT NUMBER: 142:381897

TITLE: Imidazole ring-containing compounds and organic electroluminescent displays employing the compounds as hosts for luminescent dopants

INVENTOR(S): Lee, Seok-Jong; Kim, Young-Kook; Hwang, Seok-Hwan; Yang, Seung-Gak; Kim, Hee-Yeon; Do, Young-Rag; Song, Joo-Han

PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea

SOURCE: U.S. Pat. Appl. Publ., 59 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20050074632	A1	20050407	US 2004-958542	20041006
US 7351481	B2	20080401		
KR 2005033775	A	20050413	KR 2003-69702	20031007 <--
CN 1637000	A	20050713	CN 2004-10092164	20040930
JP 2005112856	A	20050428	JP 2004-292535	20041005
			KR 2003-69702	A 20031007

PRIORITY APPLN. INFO.:

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 142:381897

AB The present invention is related to an imidazole ring-containing compound and an organic electroluminescence (EL) display device using the same. In particular, the imidazole ring-containing compound may be used alone or in

combination with a dopant as a material for organic films such as an electroluminescent layer. The organic EL display device using an organic film made of the imidazole ring-containing compound has improved characteristics such as luminance, efficiency, driving voltage, and color purity.

IT 849440-48-8D, derivs.

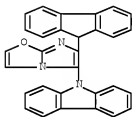
RL: DEV (Device component use); USES (Uses)
(imidazole ring-containing compds. and organic electroluminescent displays employing compds. as hosts for luminescent dopants)

IT 849440-48-8D, derivs.

RL: DEV (Device component use); USES (Uses)
(imidazole ring-containing compds. and organic electroluminescent displays employing compds. as hosts for luminescent dopants)

RN 849440-48-8 HCAPLUS

CN 9H-Carbazole, 9-[6-(9H-fluoren-9-yl)imidazo[2,1-b]oxazol-5-yl]- (CA INDEX NAME)



L9 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:281206 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 142:344877

TITLE: Organic electroluminescent (EL) devices with high brightness, emission efficiency, and heat resistance
INVENTOR(S): Maki, Shinichiro; Tanaka, Hiroaki; Kaneko, Tetsuya; Onikubo, Shunichi

PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokyo Koho, 29 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005085599	A	20050331	JP 2003-316326	20030909 <--
JP 4581355	B2	20101117		

PRIORITY APPLN. INFO.: JP 2003-316326 20030909

OTHER SOURCE(S): MARPAT 142:344877

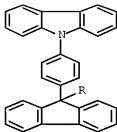
AB The devices, useful for displays in automobiles, have phosphor-containing light-emitting layers (A) or plural organic thin film layers including A, wherein the organic layers contain (un)substituted 9-R1-9-R2-fluorene [R1, R2 = (un)substituted Ph] in A or in hole-injecting and/or hole-transporting layers.

IT 848679-72-1 848679-73-2

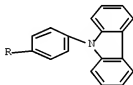
RL: TEM (Technical or engineered material use); USES (Uses)
(host, light-emitting layer; organic EL devices containing diphenylfluorene)

IT 848679-72-1 848679-73-2
 RL: TEM (Technical or engineered material use); USES (Uses)
 (host, light-emitting layer; organic EL devices containing diphenylfluorene
 derivs. with high brightness, emission efficiency, and heat resistance)
 RN 848679-72-1 HCAPLUS
 CN 9H-Carbazole, 9,9'-(9H-fluorene-9-ylidenedi-4,1-phenylene)bis- (CA INDEX
 NAME)

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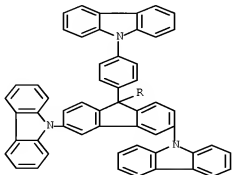


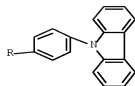
PAGE 2-A



RN 848679-73-2 HCAPLUS
 CN 9H-Carbazole, 9,9'-(9,9-bis[4-(9H-carbazol-9-yl)phenyl]-9H-fluorene-3,6-
 diyl]bis- (9CI) (CA INDEX NAME)

PAGE 1-A





OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

=> file stnguide

=> LOG Y